

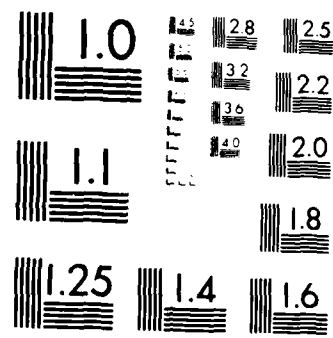
AD-A149 732 COOPER RIVER REDIVERSION PROJECT LAKE MOULTRIE AND
SANTEE RIVER SOUTH CAR. (U) CORPS OF ENGINEERS
CHARLESTON SC CHARLESTON DISTRICT JUN 76

1/5

F/G 8/13

Nil

A 10x10 grid of squares, with the top-left square missing.



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

AD-A149 732

LAKE MOULTRIE AND SANTEE RIVER
SOUTH CAROLINA

COOPER RIVER REDIVERSION PROJECT

INTAKE AND TAILRACE CANALS

APPENDIX A
BORING LOGS AND LABORATORY TESTS



U.S. ARMY ENGINEER DISTRICT, CHARLESTON
CORPS OF ENGINEERS
CHARLESTON, SOUTH CAROLINA
JUNE, 1976

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COOPER RIVER REDIVERSION PROJECT

INTAKE AND TAILRACE CANALS

APPENDIX A
(PARTIAL)

BORING LOGS

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Date	
Approved for Release	
Distribution/Or	
Restriction Code	
A-1	

U. S. ARMY ENGINEER DISTRICT, CHARLESTON

CORPS OF ENGINEERS

CHARLESTON, SOUTH CAROLINA

Hole No. IT-1

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
1. PROJECT		South Atlantic		Charleston District		1 OF 2 SHEETS	
2. LOCATION (Coordinates or Station)		N 580, 140 E 2, 323, 590		10. SIZE AND TYPE OF BIT		MSL	
3. DRILLING AGENCY		Mobile District		11. DAYUM FOR ELEVATION SHOWN (TBM or MSL)		MSL	
4. HOLE NO. (As shown on drawing title and file number)		IT-1		12. MANUFACTURER'S DESIGNATION OF DRILL		Pailine 314	
5. NAME OF DRILLER		Parden		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 5 UNDISTURBED --	
6. DIRECTION OF HOLE		<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES		0	
7. THICKNESS OF OVERBURDEN		43.5		15. ELEVATION GROUND WATER		62.8	
8. DEPTH DRILLED INTO ROCK		0		16. DATE HOLE		STARTED 14 Mar 75 COMPLETED 14 Mar 75	
9. TOTAL DEPTH OF HOLE		43.5		17. ELEVATION TOP OF HOLE		72.7	
				18. TOTAL CORE RECOVERY FOR BORING		%	
				19. SIGNATURE OF INSPECTOR		C. Davis	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
72.7	0.0		Top of Hole			Blows FT	
			Sm-silty fine sand tan	MC 21.1	1	3 20	
67.7	5.0		SC-Clayey fine sand red & tan	MC 5.0	2	40 40	
			ML-Clayey silt gray & tan			48 17	
62.7	10.0			MC 29.8	3	18 17	
						17	
57.7	15.0		CH-Flat clay - gray & pink	MC 30.0	4	20 22	
						20	
52.7	20.0		SM-Silty fine sand w/clay- layers - tan & red	MC 21.1	5	15 12	
						8 9	
47.7	25.0					12 31	
						39	
42.7	30.0					19	
			continue on sheet 2				

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET 2 OF 2 SHEETS		
Cooper River Rediversion		Charleston District				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
						Blows/FT
						21
						20
37.7	33.0					19
						18
						23
32.7	40.					28
						38
						24
29.2	43.5					32
			Bottom of hole 43.5'			

2

Hole No. IT-1A

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		Charleston District		1 OF 1 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon & 4x1/2"			
2. LOCATION (Coordinates or Station) N 580, 440 2, 323, 470				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core Bbl			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-1A				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 5 UNDISTURBED	
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 49.2		16. DATE HOLE STARTED 17 Jun 75 COMPLETED	
7. THICKNESS OF OVERBURDEN 30.0'				17. ELEVATION TOP OF HOLE 58.2			
8. DEPTH DRILLED INTO ROCK 0				18. TOTAL CORE RECOVERY FOR BORING 3			
9. TOTAL DEPTH OF HOLE 30.0'				19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
58.2	0.0		Top of hole			Blows FT	
			Sm - Top soil - brown				
53.2	5.0		Sm/SP-Mixed colors but 1 color not layered Red Brown Becomes more coarse w/ rock frags.	MC 11.8	1	12 28 33 25	
48.2	10.0		SM-SC Water Table @ 9.0(6-17-75) coarse w/small rocks & frags			15 13	
43.2	15.0		Coarse to med. w/small rocks and gravel - SM	MC 15.5	2	20 31	
38.2	20.0		Med. to fine-mixed colors clay lenses 1 continuous across ss drive but range 3 1/10 inch thick. Med. - Gray to black SM- gray		3	26 36 47 35	
33.2	25.0		w/clay lenses & rock fragments gray w/Decomp. limestone w/large amounts of shale frags	MC 16.4	4	39 37 43	
28.2	30.0		Bottom of hole 30.0'		5	48 54 49 57	

3

Hole No. 11-12

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET 1 OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ID Spitspoon & 4x5 1/2"			
2. LOCATION (Coordinates or Station) N 580, 650 E. 125, 190				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL Core Bb1			
3. DRILLING AGENCY Navajo District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) 11-12				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 8 UNDISTURBED -	
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 1			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 54.2			
7. THICKNESS OF OVERBURDEN 40.5				16. DATE HOLE STARTED 9 Jun 75		COMPLETED 9 Jun 75	
8. DEPTH DRILLED INTO ROCK 20.0				17. ELEVATION TOP OF HOLE 58.7'			
9. TOTAL DEPTH OF HOLE 60.5				18. TOTAL CORE RECOVERY FOR BORING 85.0 %			
				19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
58.7	0.0					Blows F	
58.7	0.0		SM-Brown		1	5	
48.7	10.0		SC-Colors are intermixed not layered-all material is clayey sand		2	12 19	
			Water table @ 4.5 (6-10-75)			24	
			Colors are intermixed but not layered		3	29 30	
48.7	12.6		Sm-water table @ 9.0 (6-9-75) coarse to med sand - Brown	MC 19.0	4	12 15 9 16 9	
38.7	20.0		Med. to fine sand with gray clay pockets-Brown with small gray pockets soil colors intermixed but not layered		5	16 25 30	
33.7	25.0		Med. to fine sand with gray clay pockets (more sandy) clay pocket are sporadic but not layered		6	23 36 23 24	
24.7	30.0		continue on sheet 2				

4

DRILLING LOG (Cont Sheet)				ELEVATION TOP OF HOLE 58.7		Hole No. 11-12	
PROJECT Cooper River Rediversion		INSTALLATION Charleston District		SHEET 2 OF 2 SHEETS			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g	
			Med. to fine sand w/gray clay pockets (more sandy) Brown			Blows/FT 20	
23.7	35.0		SM-more coarse Red Brown	MC 19.2		10 18	
						28	
						27	
18.7	40.0		SM-coarse has a few layers of dark gray ch ranges 1 1/2" to 2" thick. Top of rock 40.5'	MC 22.1	8	20 58	
13.7	45.0		Limestone 18" thick-small ch layers 1 3/4" then sand & shale layers-sand & shale dk gray in color.	52		Pull - 1 40.5 - 45.5 Run 5.0 Rec 2.6 C/L 2.4	
8.7	50.0		SM-silty sand w/Limestone fragments (ranges from small rocks to 1-2" layers)	100		Pull - 2 45.5 - 50.5 Run 5.0 Rec 5.0 C/L 0.0	
3.7	55.0		Silty sand - 1 piece sandstone 1 1/2" thick SM color mixed	94	Core Box 1	Pull - 3 50.5 - 55.5 Run 5.0 Rec 4.7 C/L 0.3	
1.3	60.0		Silty sand mixed-color bottom 6" dk gray CL	94		Pull - 4 55.5 - 60.5 Run 5.0 Rec 4.7 C/L 0.3	
-1.3	60.7		Bottom of hole 60.7'				

Hole No. 1T-2

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Charleston District	SHEET 1 OF 2 SHEETS
1. PROJECT Cooper River Rediversion		10. SIZE AND TYPE OF BIT 3/8" Ø S 4x5 1/2 UBL		
2. LOCATION (Coordinates or Station) N 579, 820 E2, 323, 660		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL		
3. DRILLING AGENCY Mobile District		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314		
4. HOLE NO. (As shown on drawing title and file number) 1T-2		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 5 UNDISTURBED: -		
5. NAME OF DRILLER Parden		14. TOTAL NUMBER CORE BOXES 0		
6. DIRECTION OF HOLE VERT. CAL. INCLINED DEG. FROM VERT.		15. ELEVATION GROUND WATER 62.9'		
7. THICKNESS OF OVERBURDEN 42.0		16. DATE HOLE STARTED: 12 Mar 75 COMPLETED: 12 Mar 75		
8. DEPTH DRILLED INTO ROCK 0		17. ELEVATION TOP OF HOLE 72.2'		
9. TOTAL DEPTH OF HOLE 42.0'		18. TOTAL CORE RECOVERY FOR BORING %		
		19. SIGNATURE OF INSPECTOR C. Davis		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
						Blows FT
72.2	0.0		Top of hole			
			Sm-silty fine sand Tan		1	7
						6
67.2	5.0		SC - Clayey fine sand Red & Tan		2	27
						40
			ML-Micaceous clayey silt - Gray & Pink		3	32
						15
62.2	10.0					14
						18
						22
57.2	15.0					25
			CH-Fat clay w/thin sand lenses - Gray & Pink		4	17
						19
52.2	20.0		SM- silty fine sand Pink & Tan		5	3
						5
						11
47.2	25.0					14
						14
						13
						17
42.2	30.0					19
			Continue on sheet 2			

6

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 72.2		Hole No. 1F-2		
PROJECT Cooper River Rediversion		INSTALLATION Charleston District		SHEET 2 OF 2 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Tan			Blows/FT
						8
						9
	35.0					27
						16
						18
	40.0					12
						39
	42.0					39
			Bottom of hole 42.0'			

Hole No. IT-2A

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Charleston District	SHEET 1 OF 2 SHEETS		
1. PROJECT Cooper River Rediversion			10. SIZE AND TYPE OF BIT 1 3/8" 0 SSS 5 4x5" 4BL			
2. LOCATION (Coordinates or Station) N579, 790 E2, 324, 700			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-2A			13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN 10			
5. NAME OF DRILLER Farlan			14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER 53.0			
7. THICKNESS OF OVERBURDEN 45.0'			16. DATE HOLE 2 Jun 75			
8. DEPTH DRILLED INTO ROCK 0			17. ELEVATION TOP OF HOLE 68.0'			
9. TOTAL DEPTH OF HOLE 45.0'			18. TOTAL CORE RECOVERY FOR BORING %			
			19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
68.0'	0.0		Top of hole			Blows FT
			SM - Tan to gray	MC 9.3	1	11
						16
63.0	5.0		SC-Mixed color	MC 24.9	2	32
						23
			CL-(Gray, Brown, Tan color)	MC 30.4	3	19
			Tan & Red			12
						9
						10
						8
						4
			SM-Silty Tan & Gray		5	7
45.0	20.0					7
			Tan & Red	MC 21.2	6	4
						6
						26
43.0	25.0		Find silty sand			14
						12
						12
38.0	30.0					15
			continue on sheet 2			8

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 68.0'		Hole No. 1-15	
PROJECT Cooper River Rediversion			INSTALLATION Charleston District		SHEET 2 OF 2 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
				MC 28.0		Blows/FT
33.0	35.0				7	No recovery from 33.0 - 34.5'
			Brown		8	
28.0	40.0		Med to fine sand - Gray		9	
			Very dense - Lt Gray		10	
23.0	45.0					115
			Bottom of hole 45.0'			

Hole No. IT-2B-1

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS		
1. PROJECT Cooper River Rediversion		South Atlantic	Charleston District	10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon & 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core B11		
2. LOCATION (Coordinates or Station) N579.870 E2.325.135				MSL		
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314		
4. HOLE NO. (As shown on drawing title and file number) IT-2B-1				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 33		
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE EXES 1		
6. DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 54.8		
7. THICKNESS OF OVERBURDEN 46.5				16. DATE HOLE 2 Oct		
8. DEPTH DRILLED INTO ROCK 10.0				17. ELEVATION TOP OF HOLE 54.8		
9. TOTAL DEPTH OF HOLE 56.5				18. TOTAL CORE RECOVERY FOR BORING 19. SIGNATURE OF INSPECTOR Lawson		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth, weathering, etc., if a geologic log)
54.8	0.0		Top of Hole			Water table @ Ground Level
			SM - Tan to Black Highly Organic	MC 27.2%	1	
			CL - Tan to Gray Mixed Colors		2	
49.8	5.0				3	
				MC 20.3%	4	
			SM - Black		5	
44.8	10.0		Gray to white		6	
			Green, very fine sand		7	
					8	
					9	
					10	
39.8	15.0				11	
					12	
					13	
					14	
34.8	20.0				15	
			Gray to Black W/Clay Binder Very Fine Sand		16	
					17	
					18	
29.8	25.0				19	
					20	
				MC 42.7%	21	
			Gray - Silt W/Shale Fragments		22	
24.8	30.0				23	

Continue Pg. 2

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DRILLING LOG (Cont. Sheet)

54.8

Hole No. 1

NS

OK

CHARLESTON FORMATION

MAINTAIN

MAINTAIN

2" - 4" clay

1" - 2" Sand

Sand w/ Shale Fragments

30'

75.0'

SP-1 - 4" - 6" Limestone

1" - 2" Gray

Remainder of 41.5' Top of Rock

Core

Box

1

Full - 1

41.5' - 51.5'

Reel 10.0

Reel 11.1

Core 11.1

No Recovery

Sand, clay, cemented Sand

Bottom of hole 56.5'

Notes: From 41.5' to 52.5' No Recovery was obtained. From 52.5' to 56.5' 38.5' of 41.5' to 52.5' cemented sand was obtained. The sand was under water at the time of recovery. A sand layer was hit from 52.5' to 53.5'. The core was carried to 55.0' and sp. logging was continued to 56.5' (Bottom of hole).

Hole No. IT-2C

DRILLING LOG		DIVISION	INSTALLATION		SHEET 1 OF 1 SHEETS	
1. PROJECT Cooper River Redivers on			10. SIZE AND TYPE OF BIT 1 3/8" In Splitspoon & 4x5 1/2"		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core Bbl	
2. LOCATION (Coordinates or Station) N 580, 210, E 324, 760			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
3. DRILLING AGENCY Mobile District			13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN		DISTURBED 6	
4. HOLE NO. (As shown on drawing title and file number) IT-2C			14. TOTAL NUMBER CORE JOXES		0	
5. NAME OF DRILLER Parden			15. ELEVATION GROUND WATER		46.0'	
6. DIRECTION OF HOLE VERTICAL INCLINED DEG. FROM VERT.			16. DATE HOLE		STARTED 18 Jun 75	
7. THICKNESS OF OVERBURDEN 30.0'			17. ELEVATION TOP OF HOLE		58.0'	
8. DEPTH DRILLED INTO ROCK 0			18. TOTAL CORE RECOVERY FOR BORING		%	
9. TOTAL DEPTH OF HOLE 30.0'			19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
58.0	0.0		Top of hole			Blows FT
			SC-clayey (fine sand) - color mixed but not layered-clay binder mixed not layered Tan & Red		1	4
53.0	5.0		Red Tan		2	5
						10
48.0	10.0		Clay & sand w/sand layers 1/8 to 1/4" thick-strong clay binder - Tan, Red & Brown	MC 25.3	3	21
						24
43.0	15.0		Fine and med color mixed not layered. Tan & Red	MC 23.0	4	14
						11
38.0	20.0		Med to fine w/small rocks frags & gravel		5	12
						14
33.0	25.0		SM-silty fine w/clay pockets approx 1/8 to 1/4" thick. Tan		6	22
						28
28.0	30.0		Bottom of hole 30.0'			26
						31

13

Hole No. 11-20

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1		
PROJECT		LOCATION (Coordinates of Station)	DATE	OF SHEETS		
Super River Rediversion		Charleston District	11-20	1		
10. SIZE AND TYPE OF BIT		5/8" ID Split Spoon				
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		Core bit				
12. MANUFACTURER'S DESIGNATION OF DRILL		MSI				
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		6				
14. TOTAL NUMBER CORE BOXES		1				
15. ELEVATION GROUND WATER		52.0'				
16. DATE HOLE STARTED		20 Jun 75				
17. ELEVATION TOP OF HOLE		50.0'				
18. TOTAL CORE RECOVERY FOR BORING		42.0'				
19. SIGNATURE OF INSPECTOR		C. Davis				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
50.0	1.0		Top of Hole			Blows Ft
54.0	5.0		SC - Clayey Fine Sand - Colors Mixed but not Layered Clay Binder Mixed not Layered Gray & Tan	MC 14.5		
			Tan			
59.0	10.0		Clayey Fine Sand and Contains Small Rocks & Rock Frags. Gray & Tan	MC 21.2		
64.0	15.0		SM - Silty Fine Sand w/Clay Layers 1/8" Thick	MC 30.5		
65.0	16.0		SC - Calcareous Clayey Sand w/Limestone Decomposed, Clay Layers 1/8" to 1/4" Thick - Gray	MC 20.1		
64.0	15.0		Top of Rock 24.0'			
60.0	20.0		Limestone, Gray, very sandy in spots 25.6 to 29.0		Core Box 1	Pull - 1 24.0 - 29.0 Run 5.0 Rec 2.1 C/L 2.9
			Bottom of Hole 29.0'			

14

Hole No. IT-2E

DRILLING LOG		DIVISION	INSTALLATION		SHEET 1 OF 2 SHEETS	
1 PROJECT Cooper River Rediversion			10. SIZE AND TYPE OF BIT 1 3/8" ID Spitspoon & 4x1/2"		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core Bbl	
2 LOCATION (Coordinates or Station) N579,720 E2,324,330			12. MANUFACTURER'S DESIGNATION OF DRILL MSI		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	
3 DRILLING AGENCY Mobile District			14. TOTAL NUMBER CO E BOXES 1		15. ELEVATION GROUND WATER 56.1	
4 HOLE NO. (As shown on drawing title and file number) IT-2E			16. DATE HOLE 19 Jun 75		17. ELEVATION TOP OF HOLE 66.1	
5. NAME OF DRILLER Parden			18. TOTAL CORE RECOVERY FOR BORING 27.8 %		19. SIGNATURE OF INSPECTOR C. Davis	
6 DIRECTION OF HOLE X) VERTICAL [] INCLINED _____ DEG. FROM VERT.			19. SIGNATURE OF INSPECTOR C. Davis		20. REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
7 THICKNESS OF OVERBURDEN 43.0			21. SIGNATURE OF INSPECTOR C. Davis		22. REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
8 DEPTH DRILLED INTO ROCK 7.2			23. SIGNATURE OF INSPECTOR C. Davis		24. REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
9 TOTAL DEPTH OF HOLE 50.2			25. SIGNATURE OF INSPECTOR C. Davis		26. REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
66.1	0.0		Top of Hole			Blows Ft
			CL-Fine Sandy Clay - Tan		1	7
						12
61.1	5.0		Texture is uniform-Mixed Color - Color not Layered. Red & Tan		2	18
						24
56.1	10.0		Silty Clay W/Silt Layers about 1/2" Thick Average - Layers of CL & Silt, Alter- nate. Tan, Red & Gray.		3	18
						19
						18
51.1	15.0		SC-Clayey Fine and Med. Sand with Gravel - Tan		4	18
						10
						8
46.1	20.0		Clay Fine Sand and Clay Mixed, But not Layered Sand Tan, Clay Lt. Gray			9
						10
41.1	25.0				5	7
						8
						9
36.1	30.0					10
			Continue on Sheet 2			15

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		Charleston District		11-21		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER- ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
55.1	31.0		Rock Fragments: Open Cavity From 30.0 to 31.0 - Tan			Top of Rock
			Limestone W/Sand Layers (Hard Limestone) Gray		Core	Pull - 1 Rec 0.5 31.0 - 33.3 C/L 2.0 Run 2.3
31.1	35.0		Sandstone, calcareous with shelf fragments.		Box 1	Pull - 2 33.3 - 38.3 Run 4.9 Rec 1.7 C/L 3.2
						Blow/Ft
26.1	40.0		SM - silty Fine Sand Tan & Gray			47
						39
						48
21.1	45.0					41
						55
						46
						57
15.9	50.2					85
Bottom of Hole 50.2'						

Hole No. IT-3

DRILLING LOG		DIVISION	INSTALLATION		SHEET 1 OF 2 SHEETS	
1. PROJECT Cooper River Rediversion			10. SIZE AND TYPE OF BIT 1 3/8" ID Spirlspon & 4x3 1/2"			
2. LOCATION (Coordinates or Station) N580,290 E2,324,230			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core Bbl MSL			
3. DRILLING AGENCY Mobile District			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-3			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 8		UNDISTURBED -	
5. NAME OF DRILLER Parden			14. TOTAL NUMBER CORE JOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER 10.0'			
7. THICKNESS OF OVERBURDEN 24.0'			16. DATE HOLE STARTED 28 Mar 75 COMPLETED 28 Mar 75			
8. DEPTH DRILLED INTO ROCK 0			17. ELEVATION TOP OF HOLE 64.5			
9. TOTAL DEPTH OF HOLE 24.0'			18. TOTAL CORE RECOVERY FOR BORING %			
			19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
64.5	0.0		Top of Hole			
61.5	3.0		SC-Clayey Fine Sand - Tan	MC 26.1	1	7
59.5	5.0		CL-Fine Sandy Clay - Red & Tan	MC 25.0	2	10 46 25
			CH-Fat Clay- Red & Tan	MC 30.9	3	15 10
54.5	10.0		MH-Silty Clay - Tan	MC 32.0	4	15 12 15
49.5	15.0		SC - Clayey Fine Sand - Tan & Gray	MC 18.0	5	22 25 12
44.5	20.0		SP-Gray - Coarse & Med. Sand W/Gravel	MC 24.6	6	9 7 6
40.5	24.0		SM-Silty Fine Sand W/Thin Clay Lenses - Tan	MC 32.4	7	13 19 24 46 38
39.5	25.0					
34.5	30.0					
			Continue on Sheet 2			

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		Charleston District		OF 2 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g Blow/Ft
			SM - Silty Fine Sand W/Thin Clay Lenses & Cemented Layer			46
						35
29.5	35.0				7	19
						14
						14
24.5	40.0		Tan & Black			16
						15
			SC - Calcareous Clayey and Sand W/Cemented Layers	MC 22.7	8	32
21.0	43.5					100/0.16
			Bottom of Hole 43.5			

Hole No. 1T-3A

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS		
1 PROJECT Cooper River Redivision		South Atlantic	Charleston District			
2 LOCATION (Coordinates or Station) N57W 030 E 324.030		10. SIZE AND TYPE OF BIT 1 3/8" 6 SSS & 4x5 1/2 BBL				
3 DRILLING AGENCY Mobile District		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL				
4 HOLE NO. (As shown on drawing title and file number) 1T-3A		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314				
5 NAME OF DRILLER Parden		13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN 19				
6 DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES 0				
7 THICKNESS OF OVERBURDEN 86.0'		15. ELEVATION GROUND WATER 61.2				
8 DEPTH DRILLED INTO ROCK 0		16. DATE HOLE STARTED 3 Jun 75 COMPLETED 4 Jun 75				
9 TOTAL DEPTH OF HOLE 86.0'		17. ELEVATION TOP OF HOLE 64.7				
		18. TOTAL CORE RECOVERY FOR BORING %				
		19. SIGNATURE OF INSPECTOR C. Davis				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER- ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
						Blows Ft
64.7	0.0		Top of Hole			
			SC-Organic-Top Soil Brown & Gray	MC 20.1%	1	
			SM-Medium to Fine Sand Lt. Tan	MC 14.9%	2	Water Table 4.0'
59.7	5.0		Contains Impurities-Small Amts of clay-Lt Tan to Brown		3	15
			ML-Low Plasticity Lt. Gray	MC 18.9%	4	32
			SM - Lt. Gray		5	27
54.7	10.0		More Coarse Material - Tan & Lt. Brown	MC 16.1%	6	9
					7	9
49.7	15.0		Contains Lt. Gray Lenses - Brown, Becomes More Coarse		8	8
					9	17
					10	10
44.7	20.0		Med. to Fine Sand Lt. Gray & Brown		11	4
			More Coarse Material		12	5
					13	8
39.7	25.0		Almost Pure Sand - Gray	MC 25.4%	14	13
			W/Clay Lense & Seams Gray		15	23
					16	33
34.7	30.0		Med. to Fine Sand - Tan		17	26
			Continue on Sheet 2		18	26

Hole No. IT-3A

PROJECT

INSTALLATION

SHEET

2

OF 2 SHEETS

MARKS

Cooper River Rediversion

Charleston District

ELEVATION

DEPTM

LEGEND

CLASSIFICATION OF MATERIALS
Description:

% CORE RECOVERY	BOX OR SAMPLE NO
100	1
100	2
100	3
100	4
100	5
100	6
100	7
100	8
100	9
100	10
100	11
100	12
100	13
100	14
100	15
100	16
100	17
100	18
100	19
100	20
100	21
100	22
100	23
100	24
100	25
100	26
100	27
100	28
100	29
100	30
100	31
100	32
100	33
100	34
100	35
100	36
100	37
100	38
100	39
100	40
100	41
100	42
100	43
100	44
100	45
100	46
100	47
100	48
100	49
100	50
100	51
100	52
100	53
100	54
100	55
100	56
100	57
100	58
100	59
100	60
100	61
100	62
100	63
100	64
100	65
100	66
100	67
100	68
100	69
100	70
100	71
100	72
100	73
100	74
100	75
100	76
100	77
100	78
100	79
100	80
100	81
100	82
100	83
100	84
100	85
100	86
100	87
100	88
100	89
100	90
100	91
100	92
100	93
100	94
100	95
100	96
100	97
100	98
100	99
100	100

REMARKS
(Drilling time, water loss, depth of weathering etc., if significant)

1

b

c

၄

5

i

8

44 -

35 0

Contains Large Clay Seam-
Gray

MC
55.2%

13

14

15

MC
21.5%

↓ 16'

17

18

19.

19.7

45.0

Contains Small Amts of Mica
Plastic
Non Plastic

Bottom of Hole 86.0'

Augered to Refusal

Hole No. IT-3B

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		Charleston District		OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ϕ SSS & 4x5 1/2 BBL			
2. LOCATION (Coordinates or Station) N578,840 E2,324,350				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-3B				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: 11			
5. NAME OF DRILLER Parden				14. TOTAL NUMBER COR. BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 61.4			
7. THICKNESS OF OVERBURDEN 45.0'				16. DATE HOLE STARTED 6 Jun 75 COMPLETED			
8. DEPTH DRILLED INTO ROCK 0				17. ELEVATION TOP OF HOLE 65.9			
9. TOTAL DEPTH OF HOLE 45.0'				18. TOTAL CORE RECOVERY FOR BORING %			
				19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
65.9	0.0		Top of Hole			Blows Ft	
			SM - Brown		1	4	
60.9	5.0		SC - Lt. Brown & Lt. Gray	MC 19.2%	2	17	
			MH - Lt. Gray			Water Table 6.4'	
				MC 29.3%	3	22	
55.9	10.0		SM - Coarse to Med. Sand Brown			15	
				MC 19.9%	4	6	
50.9	15.0		SC - Brown			4	
						3	
				MC 18.9%	5	8	
45.9	20.0					20	
						22	
			SM - Silty - Gray			7	
				MC 24.8%	6	24	
					7	37	
						19	
						22	
35.9	30.0					18	

Continue on Sheet 2

21

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 65.9		Hole No. 1T-3B		
PROJECT Cooper River Rediversion		INSTALLATION Charleston District		SHEET 2 OF 2 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						17
						21
30.9	35.0				8	22
						36
						32
28.9	40.0					43
					9	30
			MH- No Recovery			10
						6
						No Recovery from 40.5-43.5
20.9	45.0		SM - Gray	HC 23.1%	11	12
			Bottom of Hole 45.0'			

Hole No.

DRILLING LOG		DIVISION	INSTALLATION
1. PROJECT Cooper River Rediversion		South Atlantic	Charleston District
2. LOCATION (Coordinates or Station) 579,240 12,323,600		10. SIZE AND TYPE OF BIT 1 3/8" x 8 SSS 4	
3. DRILLING AGENCY Mobile District		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL	
4. HOLE NO. (As shown on drawing title and file number) IT-3C		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314	
5. NAME OF DRILLER Parden		13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN 10	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERT CAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE LOGS 0	
7. THICKNESS OF OVERBURDEN 45.0		15. ELEVATION GROUND WATER 60.7	
8. DEPTH DRILLED INTO ROCK 0		16. DATE HOLE 5 Jun 75	
9. TOTAL DEPTH OF HOLE 45.0		17. ELEVATION TOP OF HOLE 75.7	
		18. TOTAL CORE RECOVERY FOR BORING	
		19. SIGNATURE OF INSPECTOR C. Davis	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, etc., if applicable) g
75.7	0.0		Top of Hole			
			SM			Top Soil
			SM - Brown	MC 3.8%	1	
70.7	5.0		SC--Red Brown	MC 25.6%	2	Slightly Plastic
			SM - contains Mica Brown			
65.7	10.0			MC 28.5%	3	
60.7	15.0		SC-Plastic -Contains Mica Red, Brown & Orange	MC 32.8%	4	Water Table 11.7
			w/Sand Lenses		5	
55.7	20.0		MH-Contains Mica Red Brown	MC 35.4%	6	
			SM - Med. to Coarse Sand Lt. Brown	MC 15.8%	7	
50.7	25.0					
45.7	30.0		SC-Coarse with Slight Clay Binder - Brown	MC 17.7%	8	
Continue on Sheet 2						

DRILLING LOG (Cont Sheet)

ELEVATION TO TOP OF HOLE

75.7

Hole No. 11-50

per River Rediversion

INSTALLATION

Charleston District

SHEET 2 OF 2 SHEETS

DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS if time water has seeped into log, etc. if pertinent.
0		SM-Brown			
55.0				9	
10.0		Clay Lenses & Small Amt. of Mica - Brown			
			MC 34.6%	10	
45.0					
		Bottom of Hole 45.0'			

14
4
3
8
14
33
24
30
37
32

Hole No. IT-3D

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		Charleston District		1 OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" 6 SSS & 4x5 1/2 BBL			
2. LOCATION (Coordinates or Station) N579,700 E2,322,160				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-3D				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6 UNDISTURBED -	
5. NAME OF DRILLER Parden				14. TOTAL NUMBER C. RE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 57.6'			
7. THICKNESS OF OVERBURDEN 45.0'				16. DATE HOLE STARTED 17 Jul 75 COMPLETED 17 Jul 75			
8. DEPTH DRILLED INTO ROCK 0				17. ELEVATION TOP OF HOLE 68.6'			
9. TOTAL DEPTH OF HOLE 45.0'				18. TOTAL CORE RECOVERY FOR BORING % C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
68.6	0.0					Blows Ft	
63.6	5.0		SC-Clay & Sand - Tan			8 12 16 30	
58.6	10.0		ML-Gray, Red & White	MC 34.7%	1 2	7 9 4 6 4 6 -9 3 5 4 -7 7 7 6 7	
53.6	15.0					Water Table 11.0'	
48.6	20.0		SM-Oil Tan SM - Tan to Red	MC 19.1%	3		
43.6	25.0						
38.6	30.0						
Continue on Sheet 2				25			

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		68.6		Hole No.		IT-3D	
PROJECT		INSTALLATION		Charleston District		SHEET		OF 2	
Cooper River Rediversion									
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g Blow/Ft			
33.6	35.0		ML- Mixed Color	MC 33.1%	4	5			
						5			
						4			
						10			
28.6	40.0				5	20			
						40			
						6			
						8			
23.6	45.0		SM-Tan Silty Sand From 41.9 - 42.5	MC 18.7%	6	Gray & Black-Very Fine			
						17			
			Bottom of Hole 45.0'			22			

Hole No. IT-3E

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1	
		South Atlantic		Charleston District		OF 2 SHEETS	
1 PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ϕ SSS & 4x5" BBL			
2 LOCATION (Coordinates or Station) N580,180 E2,521,280				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3 DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4 HOLE NO. (As shown on drawing title and file number) IT-3E				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 7	
5 NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES		0	
6 DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		57.8'	
7 THICKNESS OF OVERBURDEN 45.0'				16. DATE HOLE		STARTED 18 Jul 75	
8 DEPTH DRILLED INTO ROCK 0				17. ELEVATION TOP OF HOLE		70.8'	
9. TOTAL DEPTH OF HOLE 45.0'				18. TOTAL CORE RECOVERY FOR BORING		%	
				19. SIGNATURE OF INSPECTOR R. Lawson			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
70.8	0.0		Top of Hole			Blows Ft	
65.8	5.0		SC-Tan to Red		1	9 10 26 38	
60.8	10.0		ML-White		2	13 28 7 10	
55.8	15.0		MH-White		3	Water Table 13.0' 9 17	
50.8	20.0		SM-Bottom .2' of Drive (Silty) Tan		4	7 10 17 10	
45.8	25.0		Gray		5	19 21 Very Fine Sand 27.0' 17 20	
40.8	30.0						
Continue on Sheet 2				27			

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

70.8'

Hole No.

IT-3E

PROJECT
Cooper River Rediversion

INSTALLATION

Charleston District

SHEET 2

OF 5 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS Drilling time, water, etc. if significant
a	b	c	d	e	f	g
						27
						37
35.8	35.0					38
						69
			W/Decomp. Limestone		Y	70
					6	34
30.8	40.0				X	32
			W/Clay Lenses			64
					7	110
25.8	45.0					110
			Bottom of Hole 45.0'			

Hole No. IT-4

DRILLING LOG		DIVISION	INSTALLATION	SHEET	
1 PROJECT		South Atlantic	Charleston District	OF 2 SHEETS	
2 LOCATION (Coordinates or Station)		10 SIZE AND TYPE OF BIT 1 3/8" ϕ SSS 4 4x5 1/2 BPI			
3 DRILLING AGENCY		11 DATUM FOR ELEVATION SHOWN (TBM or MSL)			
4 HOLE NO. (As shown on drawing title and file number)		MSL			
5 NAME OF DRILLER		12 MANUFACTURER'S DESIGNATION OF DRILL			
6 DIRECTION OF HOLE		Failing 314			
7 TOTAL KNEE SIDE OVERBURDEN		13 TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN			
8 DEPTH DRILLED INTO ROCK		DISTURBED UNDISTURBED			
9 TOTAL DEPTH OF HOLE		14 TOTAL NUMBER CORE BOXES			
		15 ELEVATION GROUND WATER			
		16 DATE HOLE			
		17 ELEVATION TOP OF HOLE			
		18 TOTAL CORE RECOVERY FOR BORING			
		19 SIGNATURE OF INSPECTOR			
		C. Davis			
ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
75.1	0.0	Top of Hole			Blows Ft
		SC-Clayey Fine Sand Tan & Gray		1	
70.1	5.0			2	
		Lan & red	MC 21.8		
65.1	10.0			3	
		ME-Micaceous Clayey Silt Tan & Gray	MC 33.7		
60.1	15.0			4	
		OH-Fat Clay w/Sand Layers Tan & Gray	MC 26.9		LAB CLASSIFICATION Spl. Class. CH
55.1	20.0			5	
		SC-Clayey Fine and Med. Sand - Tan	MC 16.9		
50.1	25.0				
45.1	30.0				

Continue on Sheet 2

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

75.1

Hole No. IT-4

INSTALLATION

SHEET 2

OF 2 SHEETS

Cooper River Rediversion

Charleston District

ELEVATION DEPTH LEGEND

CLASSIFICATION OF MATERIALS
Description

% CORE BOX OF
RECOVER SAMPLE
ERY NO

REMARKS

Drilling time water level depth
penetration etc. if significant

Blow/Ft

SM-Silty Fine Sand W/Clay
Layers - Dark Grav

MC
24.5%

40.1 35.0

35.1 40.0

30.1 45.0

8
9
7
13
12
14
24
37
73
95

6

Bottom of Hole 45.0'

Hole No. 11-5

DRILLING LOG		DIVISION	INSTALLATION		SHEET	
1 PROJECT		South Atlantic	Charleston District		OF 2 SHEETS	
2 LOCATION (Coordinates or Station)		N 578,390 E 2,322,760		10 SIZE AND TYPE OF BIT 1 3/8" d SSS & 4 x 5 1/2 HBI		
3 DRILLING AGENCY		Mobile District		11 DATUM FOR ELEVATION SHOWN (TBM or MSL)		
4 HOLE NO. (As shown on drawing title and file number)		11-5		MSL		
5 NAME OF DRILLER		Pardon		12 MANUFACTURER'S DESIGNATION OF DRILL		
6 DIRECTION OF HOLE		VERTICAL		Failing 314		
7 THICKNESS OF OVERBURDEN		45.0		13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		
8 DEPTH DRILLED INTO ROCK		0		DISTURBED		
9 TOTAL DEPTH OF HOLE		45.0		UNDISTURBED		
				14 TOTAL NUMBER CORE BOXES		
				0		
				15 ELEVATION GROUND WATER		
				61.3		
				16 DATE HOLE		
				STARTED 16 Jun 75		
				17 ELEVATION TOP OF HOLE		
				75.3'		
				18 TOTAL CORE RECOVERY FOR BORING		
				%		
				19 SIGNATURE OF INSPECTOR		
				C. Davis		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
75.3	0.0		Top of Hole			Blows Ft.
			SC - Clayey Fine Sand Tan & Gray	MC 17.5%	1	LAB CLASSIFICATION Spl. 1 Class. CL
70.3	5.0				2	6 10 15
			ML - Micaceous Clayey Silt Gray		3	12 7 7 4
65.3	10.0				4	4 4 5 7
60.3	15.0		CH - Fat Clay-Gray & Tan Gray & Tan		5	6 3 4 5 8
55.3	20.0		SC - Clayey Fine and Medium Sand - Tan	MC 21.0%	6	28 32 33
50.3	25.0			MC 20.8%		
45.3	30.0		SM - Silty Fine Sand - Tan			
Continue on Sheet 2						

31

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE
75.3'

Hole No. 1T - 5

PROJECT
Cooper River Rediversion

INSTALLATION
Charleston District

SHEET
2
OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS Drilling time, water loss, depth of weathering, etc. if significant
a	b	c	d	e	f	g
			SM-Silty Fine Sand - Tan			
						27
						23
40.3	35.0					34
						14
					6	17
35.3	40.0					20
						20
						22
						25
30.3	45.0					18
			Bottom of Hole 45.0'			

Hole No. 1T-5A

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
1. PROJECT		South Atlantic		Charleston District		OF 2 SHEETS	
Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ϕ sss & 4x5" RMI			
2. LOCATION (Coordinates or Station)		N579.630 E2,320.850		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		MSL	
3. DRILLING AGENCY		Mobile District		12. MANUFACTURER'S DESIGNATION OF DRILL		Failing 314	
4. HOLE NO. (As shown on drawing title and file number)		1T-5A		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6 UNDISTURBED --	
5. NAME OF DRILLER		Parden		14. TOTAL NUMBER CORE BOXES		0	
6. DIRECTION OF HOLE		<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER		58.5	
7. THICKNESS OF OVERBURDEN		43.5		16. DATE HOLE		STARTED 24 Jun 75 COMPLETED 25 Jun 75	
8. DEPTH DRILLED INTO ROCK		2.4		17. ELEVATION TOP OF HOLE		73.2	
9. TOTAL DEPTH OF HOLE		45.9		18. TOTAL CORE RECOVERY FOR BORING		72 %	
				19. SIGNATURE OF INSPECTOR		C. Davis	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
73.2	0.0		Top of Hole			Blows Ft	
			SM - Silty Fine Sand Black & Gray		1	4 5 9	
68.2	5.0		CL - Fine Sandy Clay W/Mica Tan, Red & Gray		2	15 9	
63.2	10.0		MH - Micaceous Silty Clay Gray & Tan		3	8 10 7 3 5	
58.2	15.0		SC - Clayey Fine Sand-Tan		4	5 6 10	
53.2	20.0		W/Rock Fragments		5	22 14	
48.2	25.0		Top of Rock 23.0' Limestone, "coquina" gray moderately hard; vuggy, sandy, dense.		72	Pull - 1 Rec 1.8 23.0-25.4 C/L 0.6 Run 2.4	
43.2	30.0		SM - Silty Fine Sand W/Clay Layers - Gray		6	21 25 43	

Continue on Sheet 2

33

DRILLING LOG (Cont Sheet)

ELEVATION OF SURFACE

73.2

Hole No.

IT-3A

Sheet 2

Cooper River Rediversion

Charleston District

LEGEND

CLASSIFICATION OF MATERIALS

NO. CORE BOX OR
RECOVER SAMPLE
ERY NO

REMARKS

Drilling time water in hole
cutting time in hole

g Blow/Ft

SM - Silty Fine Sand w/Clay
Layers - Gray

33.2 33.0

33.2 40.0

28.2 45.0

27.3 45.9

Shale, consolidated gray-
very sandy

SM

Bottom of Hole 45.9'

58

89

80

133

154

157

103

60

58

51

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		Hole No. IT-6 SHEET 1 OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" Ø SSS G 1X5; DBL			
2. LOCATION (Coordinates or Station) N578,390 E2,321,350				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-6				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED UNDISTURBED	
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 2			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 61.5		16. DATE HOLE STARTED 11 Jun 75 COMPLETED 11 Jun 75	
7. THICKNESS OF OVERBURDEN 33.3				17. ELEVATION TOP OF HOLE 75.5			
8. DEPTH DRILLED INTO ROCK 12.0				18. TOTAL CORE RECOVERY FOR BORING 64.2 %			
9. TOTAL DEPTH OF HOLE 45.3				19. SIGNATURE OF INSPECTOR C. Davis			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
75.5	0.0		Top of Hole			Blows Ft
			SM - Silty Fine Sand - Tan	MC 5.2%	1	3 5 6
70.5	5.0		SC - Clayey Fine Sand W/ Strong Binder - Tan, Red & Gray		2	25 18 9
65.5	10.0		MH - Silty Clay W/Thin Sand Lenses - Gray, Red & Tan	MC 31.1%	3	8 6 -
60.5	15.0		W/Thin Sand Lenses & Mica		4	Water Table 16.0'
55.5	20.0		SC - Clayey Fine Sand W/High Liquid Limit - Gray	MC 21.8	5	1 5 -
50.5	25.0		Tan		6	6 5 -
45.5	30.0					15

Continue on sheet 2

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

75.5





Hole No. IT - 6

INSTALLATION

Charleston District

Cooper River Rediversion

Sheet 2 of 2

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS <i>Description</i>	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS <i>(Drilling time, water, etc.)</i> <i>Weathering, etc., throughout</i>
c	b		d	e	f	g Blow/Ft
			ML - Silty Clay W/Sand Layers Dark Gray Top of Hole 33.3'	MC 27.5%	7	14 +16
33.3	33.0		Shale, dark gray with some sand laminations; sand lamina are partially cemented	96	Core Box 1	Pull - 1 33.3 - 38.2 Run 4.9 Rec 4.7 C/L 0.2
38.2	40.0		CL - dark gray consolidated interbedded with sand (SP) Sandstone, dark gray, calcareous, well cemented	54	Core Box 2	Pull - 2 38.2 - 42.8 Run 4.6 Rec 2.5 C/L 2.1
45.3	45.3		Shale, dark gray with layers of sandstone - not recovered Bottom of Hole 45.9'	20		Pull - 3 42.8 - 45.3 Rec 0.5 Run - 2.5 C/L 1.5

Hole No. IT - 6A

DRILLING LOG		DIVISION	INSTALLATION	SHEET		
		South Atlantic	Charleston District	1 OF 2 SHEETS		
1 PROJECT		10 SIZE AND TYPE OF BIT 1 3/8" ϕ SSS & 1x5" B.M.				
Cooper River Rediversion		11 DATUM FOR ELEVATION SHOWN (TBM or MSL)				
2 LOCATION (Coordinates of Station)		MSL				
N 377,750 E 11,322,250		12 MANUFACTURER'S DESIGNATION OF DRILL				
3 DRILLING AGENCY		Failing 314				
Mobile District		13 TOTAL NO. OF OVER- DISTURBED UNDISTURBED				
4 HOLE NO. (As shown on drawing title and file number)		BURDEN SAMPLES TAKEN				
IT-6A		14 TOTAL NUMBER OF CORE BOXES 0				
5 NAME OF DRILLER		15 ELEVATION GROUND WATER 63.1				
PARDEN		16 DATE HOLE STARTED COMPLETED				
6 DIRECTION OF HOLE		12 Jun 75 12 Jun 75				
A VERTICAL NCLINED DEG. FROM VERT.		17 ELEVATION TOP OF HOLE 78.1'				
7 THICKNESS OF OVERBURDEN 45.0'		18 TOTAL CORE RECOVERY FOR BORING				
8 DEPTH DRILLED INTO ROCK 0		19 SIGNATURE OF INSPECTOR				
9 TOTAL DEPTH OF HOLE 45.0'		C. Davis				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
78.1	0.0		Top of Hole			Blows Ft
			SC - Clayey Fine Sand W/- Strong Binder Tan, Red & Gray	MC 14.3%	1	2 15 18 23 25
73.1	5.0		Clayey Fine Sand-Tan & Gray		2	11
68.1	10.0		ML - Micaceous Silt Tan & Gray	MC 36.5%	3	16 14 8
63.1	15.0		Micaceous Clayey Silt			Water Table 15.0'
58.1	20.0		CH - Fat Clay W/Sand layers Tan & Gray	MC 30.8%	4	9 8 10 12 13
53.1	25.0		SM - Silty Fine Sand - Tan	MC 25.4%	5	9 16 20 22
48.1	30.0		Continue on Sheet 2			

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 78.1'		Hole No. IT - 6A		
COOPER RIVER REDIVERSION		INSTALLATION Charleston District		SHEET 2 OF 2 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water, etc., then weathering, etc., if significant) g Blow/Ft
						50
						49
						45
43.1	35.0				6	52
						60
						92
38.1	40.0					123
					7	136
						144
33.1	45.0					145
			Bottom of Hole 45.0'			

Hole No. IT - 68

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET 1 OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" Ø sss 4 4x3 1/2 PBL			
2. LOCATION (Coordinates or Station) N579,070 E2,320,610				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-6B				13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN		DISTURBED 0	
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES		4	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		65.2	
7. THICKNESS OF OVERBURDEN 28.5				16. DATE HOLE		STARTED 17 Jun 75	
8. DEPTH DRILLED INTO ROCK 18.5				17. ELEVATION TOP OF HOLE		74.7	
9. TOTAL DEPTH OF HOLE 47.0'				18. TOTAL CORE RECOVERY FOR BORING		65.95	
				19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER- ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
74.7	0.0		Top of Hole				Blows Ft
			SC - Tan & Black	MC 17.7%	1		3
							3
69.7	5.0						8
							16
							16
64.7	10.0						22
							0
							9
							0
59.7	15.0			MC 32.4%	2	Water Table 12.5'	
							0
							0
							5
54.7	20.0		MH - Tan, Red & White	MC 30.7%	3		12
			SM - Tan & White		4		5
49.7	25.0		Black	MC 15.7%	5		0
44.7	30.0		Fine Sand & Decomposed Limestone Limestone, "Coquina" gray hard, well cemented, vuggy.		6	Top of Rock 28.5'	
							25

Continue on Sheet 2

39

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

74.7

Hole No.

IT - 06

INSTALLATION

SHEET 2

OF 2 SHEETS

Cooper River Rediversion

Charleston District

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOY OR SAMPLE NO	REMARKS (Drilling time, water loss, etc., weathering, etc., if applicable)
				e	t	R
			Shale, Clay-dark gray to blue black, sandy, soft friable, broken, containing numerous leached shell fragments (CH-SP)	40		Pull - 1 28.5 - 33.5 Run 5.0 Rec 2.0 C/L 3.0
39.7	37.0		Sand, gray green to gray-highly calcareous silty sand, friable, unconsolidated, loose, contains scans of calcareous cemented shell material at 34-34.3 - 34.3-34.5 seam of clay shale 34.5-34.7 seam of calcareous cemented sandstone.	50		Pull - 2 33.5' - 38.5' Run 5.0' Rec 2.5' C/L 2.5'
34.7	40.0		41-42.7 friable argillaceous sandstone.	77		Pull - 3 38.5 - 42.0' Run 3.5' Rec 2.7' C/L 0.8'
29.7	45.0		Sand-clayey-alternating layers of sand and clay SP-CL	100		Pull - 4 42.0 - 47.0' Run 5.0' Rec 5.0' C/L 0.0
27.7	47.0					

Bottom of Hole 47.0'

Hole No. IT -

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS		
1 PROJECT Cooper River Rediversion		South Atlantic	Charleston District	10. SIZE AND TYPE OF BIT 1 3/8" ϕ sss & 4x5 1/2 BBL		
2 LOCATION (Coordinates or Station) N577,770 E2,321,000				11 DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL		
3 DRILLING AGENCY Mobile District				12 MANUFACTURER'S DESIGNATION OF DRILL Failing 314		
4 HOLE NO. (As shown on drawing title and file number) IT-7				13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN		
				DISTURBED 6	UNDISTURBED -	
5 NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 3		
6 DIRECTION OF HOLE VERTICAL INCLINED _____ DEG. FROM VERT.				15 ELEVATION GROUND WATER 62.6		
7 THICKNESS OF OVERBURDEN 25.0				16. DATE HOLE STARTED 10 Jun 75 COMPLETED 10 Jun 75		
8 DEPTH DRILLED INTO ROCK 20.5				17. ELEVATION TOP OF HOLE 76.1		
9 TOTAL DEPTH OF HOLE 45.5				18. TOTAL CORE RECOVERY FOR BORING 68.5 %		
				19. SIGNATURE OF INSPECTOR C. Davis		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
76.1	0.0		Top of Hole			Blows Ft
			SC - Clayey Fine sand - Tan	MC 15.1%	1	7 11 25
71.1	5.0		W/Strong Binder - Tan & Red		2	27 18 12
66.1	10.0		MH - Silty Clay W/Thin Sand Lenses - Gray	MC 29.4%	3	LAB CLASSIFICATION Spl. 4 Class. CH 10
61.1	15.0		Gray & Tan	MC 34.2%	4	7 6 5 3
56.1	20.0		SM - Silty Fine and Med. Sand W/Clay Layers - Tan		5	2 4
51.1	25.0		SC-Calcareous Clayey Sand W/ Limestone		6	Top of Hole 25.0' +100
45.2	29.1		Limestone, shell, light gray, composed of small shell fragments	100	Core Box 1	Pull - 1 25.0 - 29.1 Run 4.1 Rec 4.1 C/L 0.0
46.1	30.0		Sand with cemented layers			
Continue on Sheet 2						41

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 76.1		Hole No. IT-7		
PROJECT Cooper River Rediversion		INSTALLATION Charleston District		SHEET 2 OF 2 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth, weathering, etc., if applicable)
			Sand, light gray with layers of calcareous sandstone Hard, dense sand contains some shell fragments (SP)	29		Pull - 2 29.1 - 34.0 Run 4.9 Rec 1.4 C/L 3.5
41.1	35.0			100	Core Box 2	Pull - 3 34.0 - 36.7 Rec 0.0 Run 2.7 C/L 2.7
36.1	40.0			71		Pull - 4 36.7 - 40.5 Run 3.8 Rec 2.7 C/L 1.1
				80	Core Box 3	Pull - 5 40.5 - 45.5 Run 5.0 Rec 4.0 C/L 1.0
30.6	45.5					
			Bottom of Hole 45.5'			

Hole No. 11-8

DRILLING LOG		VISION		INSTALLATION		SHEET 1	
		South Atlantic		Charleston District		OF 2 SHEETS	
1 PROJECT				10 SIZE AND TYPE OF BIT 1 3/8" ϕ SSS & 4x5 1/2 BBI			
2 LOCATION (Coordinates or Station)				11 DATUM FOR ELEVATION SHOWN (TBM or MSL)			
Cooper River Rediversion				MSL			
3 DRILLING AGENCY				12 MANUFACTURER'S DESIGNATION OF DRILL			
Mobile District				Feeling 314			
4 HOLE NO. (As shown on drawing title and file number)				13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN			
11-8				5			
5 NAME OF DRILLER				14 TOTAL NUMBER CORE BOXES			
Parden				4			
6 DIRECTION OF HOLE				15 ELEVATION GROUND WATER			
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED <input type="checkbox"/> DEG FROM VERT				63.2			
7 THICKNESS OF OVERBURDEN				16 DATE HOLE			
21.0				STARTED 6 Jun 75 COMPLETED 9 Jun 75			
8 DEPTH DRILLED INTO ROCK				17 ELEVATION TOP OF HOLE			
24.3				75.2			
9 TOTAL DEPTH OF HOLE				18 TOTAL CORE RECOVERY FOR BORING			
45.3				67.1 %			
				19 SIGNATURE OF INSPECTOR			
				C. Davis			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
75.2	0.0		Top of Hole			Blows Ft
			SC - Clayey Fine Sand - Tan			6
						8
70.2	5.0				1	14
						25
				MC 22.4%	2	28
65.2	10.0		MH - Silty Clay W/Thin Sand Layers - Gray			8
					3	7
				MC 28.6%		4
60.2	15.0					2
						3
			SM - Silty Fine Sand W/Clay Layers - Gray & Tan			5
55.2	20.0			MC 20.5%	4	4
						7
54.2	21.0		Limestone, light gray "coquina" hard well cemented, porous, contains medium to large shell fragments - Plio-pleistocene	78	Core Box 1	Top of Rock 21.0' 117 Pull - 1 21.0 - 23.3 Rec 1.8 Run 2.3 C/L 0.5
50.2	25.0		Clay-Sandy, dark gray to black contains highly leached shell fragments			Pull - 2 23.3 - 28.3 Run 5.0 Rec 4.6 C/L 0.4
			Limestone, light gray, well cemented with the except. of a few pockets of sandy clay	92	Core Box 2	
45.2	30.0		Limestone, shell light gray, argillaceous well cemented			

Continue on Sheet 2

43

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 75.2		Hole No. IT-8		
PROJECT Cooper River Rediversion		INSTALLATION Charleston District		SHEET 2 OF 2 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO f	REMARKS g (Drilling time, water loss, depth of weathering, etc., if significant)
40.2	35.0		SM-silty, light gray interbedded with clay, soft.	100	Core	Pull - 3 28.3 - 33.3 Run 5.0 Rec 5.0 C/L 0.0
				85	Box 3	Pull - 4 33.3 - 37.1 Run 3.8 Rec 2.1 C/L 1.7
35.2	40.0		SM-sand, silty, medium grain contains shell fragments.	34	Core	Pull - 5 37.1 - 41.8 Run 4.7 Rec 1.6 C/L 3.1
				85	Box 4	Pull - 6 41.8 - 45.3 Run 3.5 Rec 3.0 C/L 0.5
29.9	45.3		Bottom of Hole 45.3'			

Hole No. IT-9





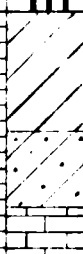


DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ϕ SSS 4 1/2 BBL			
2. LOCATION (Coordinates or Station) N577,300 E2,319,420				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-9				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 5	
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES		4	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		67.0'	
7. THICKNESS OF OVERBURDEN 24.5				16. DATE HOLE		STARTED 2 Jun 75	
8. DEPTH DRILLED INTO ROCK 20.8				17. ELEVATION TOP OF HOLE		77.0'	
9. TOTAL DEPTH OF HOLE 45.3'				18. TOTAL CORE RECOVERY FOR BORING		78.8 %	
				19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
77.0	0.0		Top of Hole			Blows Ft	
			SC - Clayey Fine Sand - Tan	MC 18.3%	1	5	
						8	
72.0	5.0		Tan & Gray		2	15	
						18	
						18	
67.0	10.0		ML - Micaceous Clayey Silt Tan & Gray	MC 36.5%	3	Water Table @ 10.0'	
						4	
62.0	15.0		MH - Silty Clay w/Thin Sand Lenses - Tan & Gray	MC 34.2%	4	5	
						5	
						5	
57.0	20.0		SM - Silty Fine and Med. Sand-Gray	MC 19.5%	5	1	
						3	
						2	
52.0	25.0		Top of Rock 24.5'			3	
			Limestone, light gray "coquina" well cemented, hard	86	Core Box 1	Pull - 1 24.5 - 29.1 Run 4.6 Rec 4.0 C/L 0.6	
47.0	30.0		Sand-Transition zone, light gray, clayey, contains numerous shell fragments.				

Continue on Sheet 2

45

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. IT-9		
PROJECT		INSTALLATION		SHEET 2		
Cooper River Rediversion		Charleston District		OF 2 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth scattering, etc. if available)
a	b	c	d	e	f	g
			Shale, Gray, soft interbedded with SP, contains some highly leached shell fragments.	56	Core Pull - 2 Box 2 29.1 - 33.5 Run 4.4 Rec 2.5	C/L 1.9
42.0	35.0			50	Core Pull - 3 Box 3 33.5 - 38.1 Run 4.6 Rec 3.7	C/L 0.9
37.0	40.0			100	Core Pull - 4 Box 4 38.1 - 42.8 Run 4.7 Rec 4.7 C/L 0.0	
31.7	45.3			40	Pull - 5 42.8 - 45.3 Run 2.5	Rec 1.5 C/L 1.0
Bottom of Hole 45.3'						

Hole No. IT-9A

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET OF 2 1 SHEETS		
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" Ø SSS & 4x5 1/2 EBL				
2. LOCATION (Coordinates or Station) N576,890 E2,319,760				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL				
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Pailing 314				
4. HOLE NO. (As shown on drawing title and file number) IT-9A				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 4		
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES		5		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		66.8		
7. THICKNESS OF OVERBURDEN 20.0				16. DATE HOLE STARTED		5 Jun 75		
8. DEPTH DRILLED INTO ROCK 25.1				17. ELEVATION TOP OF HOLE		75.8		
9. TOTAL DEPTH OF HOLE 45.1				18. TOTAL CORE RECOVERY FOR BORING		84.9 %		
				19. SIGNATURE OF INSPECTOR C. Davis				
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g		
75.8	0.0		Top of Hole			Blows Ft		
			SC - Clayey Fine Sand - Tan		1	6		
						14		
70.8	5.0						25	
			Red & Tan		2	24		
						23		
						8		
65.8	10.0		MI - Silty Clay W/Mica and Sand Layers - Gray		3	5		
						3		
						4		
60.8	15.0		W/Sand Layers		4	3		
						1		
						8		
55.8	20.0			MC 35.5%		9		
			Clay-gray, sandy, calcareous, highly fossiliferous, soft to firm with zones of well cemented limestone. Ref. soft zones Log 68		Core Box 1	Pull 1 - 1 20.0 - 23.8 Run 3.8 Rec 2.6 C/L 1.2		
50.8	25.0						24.8 to 25.4 zone of large shells	
							Sand, clayey, gray glauconitic contains numerous leached shells	
			Limestone, gray, well cemented hard. "coquina"		Core Box 2	Pull 1 - 2 23.8 - 27.8 Run 4.0 Rec 4.5 C/G 0.5		
							112	
45.8	30.0		SC-gray, some glauconitic, leached fossils-Transition zone					
			sand, clay contains numerous leache fossil fragments			Continue on Sheet 2		

47

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE	Hole No.			
		75.8	IT-9A			
INSTALLATION		SHE.				
Cooper River Rediversion		Charleston District				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS <i>Description</i>	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS <i>Drilling time, water loss, depth weathering, etc. if significant</i>
			Shale-Dark gray, soft to firm interbedded with fine grain light gray sand	81	Core Pull-3 Box 27.8 - 32.7 3 Run 4.9	Rec 4.0 C/L 0.0
41.8	35.0			100	Core Pull-4 Box 32.7-37.3 4 Run 4.6 Rec 4.6 C/L 0.0	
35.8	40.0			83	Core Pull-5 Box 37.3-40.3 Run 3.0	Rec 2.5 C/L 0.5
30.7	45.1			64	Core Pull - 6 Box 40.3 - 45.1 5 Run 4.8 Rec 3.1 C/L 1.7	
Bottom of Hole 45.1						

DRI LING LOG		DIVISION	INSTALLATION	Hole No. 11	SHEET OF 2 SHEETS
1. PROJECT <u>Cooper River Rediversion</u>		10. SIZE AND TYPE OF BIT 1 3/8" SSS 5 4x5 1/2 BTL		11. ELEVATION FOR ELEVATION SHOWN TBM or MSL	
2. LOCATION (Coordinates or Station) <u>N577.820 E2.319.21</u>		12. MANUFACTURER'S DESIGNATION OF DRILL <u>MSI</u>		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	
3. DRILLING AGENCY <u>Mobile District</u>		14. TOTAL NUMBER CORE BOXES <u>4</u>		15. ELEVATION GROUND WATER <u>78.1</u>	
4. HOLE NO. (As shown in drawing title and file number)		16. DATE HOLE <u>29 May 1975</u>		17. ELEVATION TOP OF HOLE <u>78.1</u>	
5. NAME OF DRILLER <u>Parden</u>		18. TOTAL CORE RECOVERY FOR BORING <u>84.7</u>		19. SIGNATURE OF INSPECTOR	
6. DIRECTION OF HOLE <u>X-VENT</u>		17. ELEVATION TOP OF HOLE <u>78.1</u>		18. TOTAL CORE RECOVERY FOR BORING <u>84.7</u>	
7. THICKNESS OF OVERBURDEN <u>24</u>		19. SIGNATURE OF INSPECTOR		20. REMARKS	
8. DEPTH OF GROUND WATER <u>31.7</u>		20. REMARKS		21. REMARKS	
9. TOTAL DEPTH OF HOLE <u>31.7</u>		21. REMARKS		22. REMARKS	
ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS Description	CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
78.1	0.0	Top of Hole			Blows Ft
		MC - Clayey fine sand Tan & Red		1	4
					8
					13
73.1	5.0		MC 21.9%	2	19
					23
68.1	10.0	MH-Tan and gray micaceous silty clay		3	4
					9
					4
63.1	15.0	CH-Tan and gray-fat clay		4	3
					2
					5
58.1	20.0	SC-Gray clayey fine and medium sand	MC 20.1%	5	3
					5
				6	Refusal at 24.5
53.1	25.0	Limestone, light gray "coquina" weathered slightly sandy to clayey appears reworked	100	Core Box 1	Scale Change Pull - 1 24.5' - 28.6'
48.1	30.0	Transition Zone-SC Shale-dark gray soft inter- bedded with sand layers note			Run 4.1 Rec 4.1

Continue on Sheet 2

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

78.1

Hole No. 1T-9B

INSTALLATION

SHEET 2

per River Rediversion

Charleston District

OF 2 SHEETS

DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS
					Drilling time, water, depth, weathering, etc. if not shown
		(Continued) some of the layers are well cemented sandstone 33.5'-33.9'	74	Core Pull - 2 Box 28.6-33.6 2 28.6 - 33.6 Rec 2.7 Run 5.0 C/L 1.3	
38.0	39.0	39.0 - 39.2 Poorly sorted sand with shell fragments and lamina of peat lignite	91	Core Pull - 3 Box 33.6 - 38.4 3 Run 4.8 Rec 4.4 C/L 0.4	
38.0	40.0	Sandstone, gray medium, grain		Core Pull - 4 38.4 - 43.7	
		Shale-dark gray, soft interbedded with sand layers	75	Core Run 5.3 Box Rec 4.0 4 C/L 1.3	
40.0	42.0		86	Core Pull - 5 43.7 - 46.0 Rec 2.0 Run 2.3 C/L 0.3	
42.0	46.0				

Bottom of Hole 46.0'

Hole No. 11-90

DRILLING LOG		DIVISION	INSTALLATION	SHEET		
		South Atlantic	Charleston District	OF 2 SHEETS		
1. PROJECT		10. SIZE AND TYPE OF BIT 1 3/8" ϕ sss & 4x5" BBL				
2. LOCATION (Coordinates or Station)		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)				
N578,500 12,319,270		MSL				
3. DRILLING AGENCY		12. MANUFACTURER'S DESIGNATION OF DRILL				
Mobile District		Failing 314				
4. HOLE NO. (As shown in drawing title and file number)		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN				
IT-9C		DISTURBED () UNDISTURBED -				
5. NAME OF DRILLER		14. TOTAL NUMBER CORE BOXES 2				
Garden		15. ELEVATION GROUND WATER 67.3'				
6. DIRECTION OF HOLE		16. DATE HOLE				
X VERTICAL Y LINEAR DEG. FROM VERT.		STARTED 23 June 1975 COMPLETED 24 June 1975				
7. THICKNESS OF OVERBURDEN 33.0		17. ELEVATION TOP OF HOLE 77.3				
8. DEPTH DRILLED INTO ROCK 11.7		18. TOTAL CORE RECOVERY FOR BORING 89.5 %				
9. TOTAL DEPTH OF HOLE 44.7		19. SIGNATURE OF INSPECTOR				
		C. Davis				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
77.3	0.0		Top of Hole			Blows Ft
			SM-Silty fine sand - tan	MC 7.8%	1	4 5
72.3	5.0		SC-Clayey fine sand - tan		2	6 10 11 12
67.3	10.0		ML-Micaeous clayey silt tan & gray		3	13 14 15 16
62.3	15.0					17 18 19
57.3	20.0		CH-fat clay with thin sand lenses	MC 35.1%	4	20 21 22 23
54.8	22.5		SM-Silty fine sand with shell green & gray Top of Rock 22.5'	MC 36.2%	5	24 25
52.3	25.0		Limestone, Coquina, gray, hard	100	Core Box 1	Scale Change Pull - 1 22.5 - 25.3 Rec 2.8 C/L 0.0
			SM-sand, clayey sand, gray, sand with shell & limestone layers SW-SC	100		Run 2.8 Pull - 2 25.3 - 29.8 Run 4.5 Rec 4.5 C/L 0.0
47.3	30.0					
Continue on Sheet 2						51

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE	Hole No.	
INSTALLATION				
Project		District	Sheet	
ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO
LEGEND				REMARKS (drilling time, water loss, etc.)
77.3		SM - Sand, gray, laminated with clays	61	Core Full - 3 Box 29.8 - 34.2 Run 4.4 Rec 2.7 C/L 1.7 Scale Change
34.2	42.3	SM-Silty fine sand - gray		
34.2	35.0			150
35.0	35.5			165
35.5	36.0			159
36.0	36.5			180
36.5	37.0			59
37.0	37.5			45
37.5	38.0			48
Bottom of Hole 44.7'				

Hole No. IT-90

DRILLING LOG		DIVISION	INSTALLATION	SHEET		
		South Atlantic	Charleston District	OF 2 SHEETS		
1. PROJECT Cooper River Reversion		10. SIZE AND TYPE OF BIT 3/8" Ø sss & 4x5 1/2" B.				
2. LOCATION (Coordinates or Station) N579,290 E2,318,930		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL				
3. DRILLING AGENCY Mobile District		12. MANUFACTURER'S DESIGNATION OF DRILL Falling 314				
4. HOLE NO. (As shown on drawing title and file number) IT-90		13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN				
5. NAME OF DRILLER Parden		14. TOTAL NUMBER CORE BOXES 1				
6. DIRECTION OF HOLE X VERTICAL INCLINED DEG. FROM VERT.		15. ELEVATION GROUND WATER 70.0'				
7. THICKNESS OF OVERBURDEN 38.7		16. DATE HOLE STARTED 21 July 1975 COMPLETED 22 July 1975				
8. DEPTH DRILLED INTO ROCK 5.8		17. ELEVATION TOP OF HOLE 80.0				
9. TOTAL DEPTH OF HOLE 44.5		18. TOTAL CORE RECOVERY FOR BORING 29.3 %				
		19. SIGNATURE OF INSPECTOR C. Davis				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVER- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
80.0	0.0		Top of Hole			Blows Ft
			SM-Silty fine sand - tan		1	4 4
75.0	5.0		SC-Clayey fine sand-tan		2	6 7 13 Gray
70.0	10.0		ML-Micaeous clayey silt tan & gray		3	6 7 6 6
65.0	15.0		CH-Fat clay with thin sand lenses - Red & Tan		4	7 4 5 2
60.0	20.0		MH-Silty clay - gray		5	1 2 4
55.0	25.0		SC-calcareous clayey sand w/ shell gray		6	6
51.5	26.5		Top of Rock 26.5			+100
50.0	30.0		Limestone, tan highly argil- laceous shell rock, glauc- onitic with local high % of clay.	27	Core Box 1	Pull -1 26.5 - 30.8 Run 4.3 Rec 1.2 C/L 3.1
			Continue on Sheet 2			53

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE	Hole No.			
		80.0	IT-9D			
INSTALLATION		SHEET 2				
Cooper River Rediversion		of 2 SHEETS				
CHARLESTON DISTRICT						
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS
			(Description)	(%)	(I)	(Drilling time, water, etc. at bottom of hole)
47.5	32.5		Limestone, gray "coquina" hard sound shell rock, vuggy	29		Pull - 2 30.8 - 32.5 Run 1.5
45.0	35.0		SM-Silty fine sand with clay layers - gray		7	Blows/Ft Rec 0.5 C/L 1.0
40.0	40.0					10
						29
						33
						61
						144
						175
						181
35.5	44.5					166
Bottom of Hole 44.5'						

Hole No. 11-

DRILLING LOG		DIVISION	INSTALLATION	SHEET		
		South Atlantic	Charleston District	OF 2		
1. PROJECT Cooper River Rediversion		10. SIZE AND TYPE OF BIT 1 3/8" ID Spills				
2. LOCATION (Coordinates or Station) N577,020 E2,318,490		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core				
3. DRILLING AGENCY Mobile District		12. MANUFACTURER'S DESIGNATION OF DRILL Pailing 314				
4. HOLE NO. (As shown on drawing title and file number) 11-10		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 5				
5. NAME OF DRILLER Parden		14. TOTAL NUMBER CORE BOXES 4				
6. DIRECTION OF HOLE X VERTICAL		15. ELEVATION GROUND WATER 69.8				
7. THICKNESS OF OVERBURDEN 24.5		16. DATE HOLE STARTED 28 May 75				
8. DEPTH DRILLED INTO ROCK 22.1		17. ELEVATION TOP OF HOLE 78.8				
9. TOTAL DEPTH OF HOLE 46.6		18. TOTAL CORE RECOVERY FOR BORING 86.4				
19. SIGNATURE OF INSPECTOR C. Davis						
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
78.8	0.0		Top of Hole			
73.8	5.0		SC-Clayey fine sand tan & gray		1	
68.8	10.0		Mi-Micaceous silty Clay		2	
63.8	15.0		CH-Fat clay - gray		3	
58.8	20.0		SC-Calcareous clayey sand with limestone - green & gray		4	
54.3	24.5		Top of Rock 24.5'		5	
53.3	25.5		Limestone, light tan weathered, slightly sandy to clayey. Material appears to be re-worked. Irregular contact 26.4'	49	Core Box 1	Ph11 - 1 24.5 - 29.2 Run 4.7 Rec 4.7 C/L 0.0
48.8	30.0		Limestone "coquina" well cemented hard			

Continue on Sheet 2

55

(Cont Sheet)

ELEVATION TOP OF HOLE

78.8

Hole No. 11-10

for Rediversion

INSTALLATION

Charleston District

SHEET 2

OF 2 SHEETS

DEPTH	CLASSIFICATION OF MATERIALS <i>Description</i>	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS <i>Drilling time, water loss, depth of weathering, etc., if significant</i>
1-10	Limestone, dark gray "coquina" well cemented-hard			Pull - 2 29.2 - 33.6
10-11	Clay-transition zone-dark gray with shell fragments leached,	100	2	Run 4.4 Rec 4.4 C/L 0.0
11-12	consolidated			
12-13	Shale, dark gray with sand (SM) paper. Thin lamina to	74	3	Pull - 3 33.6 - 38.6
13-14	3' tjocl beds. Some sand layers are partially cemented and some areas contain pockets of sand.			Run 5.0 Rec 3.7 C/L 1.3
14-15	42.3-42.5 Sand Casts	80		Pull -4 38.6 - 43.6
15-16			Core Box	Run 5.0 Rec 4.0 C/L 1.0
16-17			4	Pull - 5 43.6 - 46.6
17-18		76		Run 3.0 Rec 2.3 C/L 0.7

Bottom of Hole 46.6'

Hole No. 11-11

DRILLING LOG		DIVISION	INSTALLATION		SHEET	
		South Atlantic	Charleston District		OF 2 SHEETS	
1. PROJECT			10. SIZE AND TYPE OF BIT 1 3/8" A SSS 400 BII			
2. LOCATION (Coordinates or Station)			11. DATUM FOR ELEVATION SHOWN (THM or MSL)			
N576,830 12,317,840			MSL			
3. DRILLING AGENCY			12. MANUFACTURER'S DESIGNATION OF DRILL			
Mobile District			Failing 314			
4. HOLE NO. (As shown on drawing title and file number)			13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN			
11-11			0			
5. NAME OF DRILLER			14. TOTAL NUMBER CORE BOXES			
Parden			3			
6. DIRECTION OF HOLE			15. ELEVATION GROUND WATER			
X, VERTICAL [] IN LINED [] DEG. FROM VERT			75.0			
7. THICKNESS OF OVERBURDEN			16. DATE HOLE			
33.0			STARTED COMPLETED			
8. DEPTH DRILLED INTO ROCK			23 May 1975 27 May 1975			
12.3			17. ELEVATION TOP OF HOLE			
9. TOTAL DEPTH OF HOLE			79.9			
45.3			18. TOTAL CORE RECOVERY FOR BORING			
			91.9			
			19. SIGNATURE OF INSPECTOR			
			C. Davis			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b		a	e	f	g
79.9	0.0		top of hole			Blows Ft
			SC-Clayey fine sand		1	
74.9	5.0			MC	2	
				19.1%		
69.9	10.0				3	
			MH-Silty clay - dark gray			
64.9	15.0			MC	4	
				61.1%		
59.9	20.0		SM-silty fine sand with clay layers - gray			
				MC	5	
54.9	25.0			26.6%		
49.9	30.0		SC-calcareous clayey sand with limestone - gray		6	
				22.9%		

Continue on sheet 2

57

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 79.9

Hole No. 11-11

PROJECT

INSTALLATION

Cooper River Rediversion

Charleston District

ELEVATION DEPTH LEGEND

CLASSIFICATION OF MATERIALS
Description

% COR
RECOVER
ERY

FOOT
SAMPLE
NO.

MARK

33.0



Top of Rock 33.0'

Limestone, light gray, "coquina"

zone of large shells 33.0-33.5'

33.5

Sand, clayey, transition zone

78

dark gray contains numerous

pieces of shells

Core

Box

1

33.0-33.5

33.5

33.5

33.5

33.5

33.5

C/L 0.6

34.0

Sand, light gray, inter-

bedded with clay layers, soft

111

Core

Box

2

33.5-34.0

34.0

34.0

34.0

34.0

34.0

Rec 4.0

C/G 0.1

Shale, dark gray, soft, inter-

bedded with sand lamina

(S/L)

87

Core

Box

3

34.0-34.5

34.5

34.5

34.5

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Bottom of Hole 45.3'

DIVISION		INSTALLATION		SHEET		
DRILLING LOG		South Atlantic		Charleston District		
1. PROJECT		10. SIZE AND TYPE OF BIT		SHEET NO.		
Cooper River Rediversion		1 5/8" x 55.4 x 51		OF SHEETS		
2. LOCATION (Coordinates or Station)		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)				
N577,760 E2,317,300		VSL				
3. DRILLING AGENCY		12. MANUFACTURER'S DESIGNATION OF DRILL				
Mobile District		Falling 314				
4. HOLE NO. (As shown on drawing title and file number)		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN				
IT-11A		DISTURBED UNDISTURBED				
5. NAME OF DRILLER		14. TOTAL NUMBER CORE BOXES				
Parden		1				
6. DIRECTION OF HOLE		15. ELEVATION GROUND WATER				
X VERTICAL INCLINED DEG. FROM VERT		76.1				
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED COMPLETED				
46.5		23 Jun 1955 23 Jun 1955				
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE				
0		80.1				
9. TOTAL DEPTH OF HOLE		18. TOTAL CORE RECOVERY FOR BORING				
46.5		19. SIGNATURE OF INSPECTOR				
		Lawson				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
85.1	0.0		Top of Hole			Blow Ft.
			SM-Silty sand - tan	MC 13.2	1	
80.1	5.0		SC-Sand with clay lenses tan & red			
			ML-Very fine silt (Mixed colors)	MC 29.1	2	Water table 9.0'
75.1	10.0					
			SM-tan	MC 32.9	3	
70.1	15.0					
			MH-gray		4	
65.1	20.0					
			SM-with highly decomp. limestone green	MC 24.5	5	
60.1	25.0					
55.1	30.0					
Continue on Sheet 2						

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
		85.1'		IT-11A		
PROJECT		INSTALLATION		SHEET 2 OF 2 SHEETS		
Cooper River Rediversion		Charleston District				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g Blow/ft
						55
						75
					5	24
50.1	55.0					89
			White		1	58
					6	91
45.1	40.0		With Shale Layers (1/2" to 1" Thick)		1	45
					7	74
						49
40.1	45.0					52
39.5	46.5					66
			Bottom of Hole 46.5'			

Hole No. 71-115

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Charleston District	SHEET OF 10 SHEETS		
1. PROJECT Cooper River Rehabilitation		10. SIZE AND TYPE OF BIT 1 3/8" x 3 1/2" x 4 1/2" MC				
2. LOCATION (Coordinates or Station) N578,280 E2,316,710		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL				
3. DRILLING AGENCY Mobile District		12. MANUFACTURER'S DESIGNATION OF DRILL Falling 314				
4. HOLE NO. (As shown on drawing title and file number) IT-115		13. TOTAL NO. OF OVERBURDEN DISTURBED BURDEN SAMPLES TAKEN 8				
5. NAME OF DRILLER Pardner		14. TOTAL NUMBER CORE BOXES 2				
6. DIRECTION OF HOLE VERTICAL INCLINED DEG. FROM VERT.		15. ELEVATION GROUND WATER 75.8				
7. THICKNESS OF OVERBURDEN 37.0		16. DATE HOLE STAR. ED. 16 July 17 July				
8. DEPTH DRILLED INTO ROCK 8.0		17. ELEVATION TOP OF HOLE 84.8				
9. TOTAL DEPTH OF HOLE 45.0		18. TOTAL CORE RECOVERY FOR BORING 100%				
		19. SIGNATURE OF INSPECTOR C. Davis				
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
84.8	0.0		Top of hole			
			SM-silty fine sand - tan	MC 100%	1	
79.8	5.0		SC-clayey fine sand tan & red		2	
74.8	10.0		tan & gray	MC 18.1%	3	
			MH-silty clay w/ thin sand layers - tan		4	
69.8	15.0		Gray			
				MC 58.4%	5	
64.8	20.0					
			SC-clayey fine and med. sand gray	MC 56.9%	6	
59.8	25.0					
54.8	30.0					

Continue on Sheet 2

61

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

84.8

Hole No. IT-11b

INSTALLATION

Charleston District

SHEET 2

OF 2 SHEETS

San Juan River Rediversion

DATE: 10/1/62

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS

(Describe)

% CORE
RECOVERED

BOX OR
SAMPLE
NO

REMARKS

(Drilling time, water loss, depth of weathering, etc., if significant)

R Blow/Ft



SC-calcareous clayey sand
w/shell - gray

7

31

+100

Top of Rock 32.5



Limestone, "Coquina" dark
gray-small % of argillaceous
cement, hard, sound rock
luggy

Core

Pull-1

Box

32.5-35.5

1

Run 3.0

C/L 2.5

Rec 0.5



Sandstone & claystone, dark
gray to blue black, soft con-
solidated, massive initially
calcareous with leached shells
then grade into friable,
finely sandstone.

Core

Pull-2

Box

35.5-40.5

2

Run 5.0

Rec 4.7

C/L 0.3



Clay-sandy, laminated layers
of clay and sand, SP-CH-CL

MC

37.2%

8

68

69

73

Bottom of Hole 45.0'

62

Hole No. 71

DRILLING LOG		DIVISION	INSTALLATION	SHEET	
1 PROJECT		South Atlantic	Charleston District	1 OF 2 SHEETS	
2 COOPER		100-100	10 SIZE AND TYPE OF BIT	3 1/2" A.S.	
2 LOCATION		Mobile, Ala.	11 DATUM FOR ELEVATION SHOWN	MSL	
3 DRILLING AGENCY		Mobile, Ala.	12 MANUFACTURER'S DESIGNATION OF DRILL	Feeling 314	
4 HOLE NO. (As shown on drawing and file number)		17-12	13 TOTAL NO. OF OVER- DISTURBED	UNDISTURBED	
5 NAME OF DRILLER		Parson	14 TOTAL NUMBER CORE BOXES		
6 DIRECTION OF HOLE		X VERTICAL	15 ELEVATION GROUND WATER		
7 THICKNESS OF OVERBURDEN		50.7	16 DATE HOLE	21 May 1972	
8 DEPTH OF ELEVANT ROCK		8.3	17 ELEVATION TOP OF HOLE	81.7	
9 TOTAL DEPTH OF HOLE		59.0	18 TOTAL CORE RECOVERY FOR BORING	54.7	
			19 SIGNATURE OF INSPECTOR	C. Davis	
ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
51.7	0	Top of Hole			
		MC-Silty fine sand - tan		1	
		MC-clayey fine sand tan, red & gray	MC 20.2%	2	
		SM-Silty fine sand - tan & gray		3	
		GH-Fat clay - tan	MC 40.2%	4	
		MH-Silty clay - dark gray	MC 65.7%	5	LAB CLAS Spl.
		SM-Silty fine and med. sand green		6	
		with shell			

Continue on Sheet 2

63

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE	Hole No.	
PROJECT		INSTALLATION	SHEET	
COOPER RIVER REDIVERSION		CHARLESTON DISTRICT	2	
CLASSIFICATION OF MATERIALS		% CORE RECOVERY	BOX OK SAMPLE NO	REMARKS
Description				(Drilling time, water loss, depth of weathering, etc., if significant)
				R Blow/Ft
	SM-silty fine and med. sand with shell - green			14
				20
				31
49.7	55.0			38
48.0	56.7			+100
	Top of Rock 36.7'			36.7
	limestone, "coquina" light gray, well cemented: note zone of large shells at 37.5 to 38.2'			100/05' Refusal @
44.7	40.0			Pull-1
				36.7-40.3
				Run 3.6
				Rec 3.6 C/L 0.0
	Sand, transition zone, clayey dark gray containing numerous shells			Pull-2
				40.3-45.0
				Run 4.7
				Rec 3.4
39.7	4.0			C/L 1.3
	Sand, light gray - silty SM			
	Bottom of Hole 45.0'			

Hole No.

DRILLING LOG		DIVISION	INSTALLATION
1 PROJECT Cooper River Redirection		South Atlantic	Barter 100
2 LOCATION (Coordinates or Station) N576, 570 E2, 315, 820		10 SIZE AND TYPE OF BIT 11 DATUM FOR ELEVATION SHOWN FROM (M.S.L.)	
3 DRILLING AGENCY Mobile District		12 MANUFACTURER'S DESIGNATION OF DRILL	
4 HOLE NO. (As shown on drawing title and file number)		13 TOTAL NO. OF OVER-CAST BURDEN SAMPLES TAKEN	
5 NAME OF DRILLER Parden		14 TOTAL NUMBER OF CORE BOXES	
6 DIRECTION OF HOLE VERTICAL		15 ELEVATION GROUND WATER	
7 THICKNESS OF LITHOGEN		16 DATE HOLE STARTED	
8 DEPTH DRILLED IN FEET		17 ELEVATION TOP OF HOLE	
9 TOTAL DEPTH OF HOLE		18 TOTAL CORE RECOVERY FOR BORING	
		19 SIGNATURE OF INSPECTOR C. Davis	
ELEVATION	DEPTH OF END	APPROXIMATE WATER LEVEL	REMARKS
83.4	0.0		Drilling time, water loss, depth, weathering, etc. not significant
78.4	5.0		11.0
73.4	10.0		11.0
68.4	15.0		11.0
63.4	20.0		11.0
58.4	25.0		11.0
53.4	30.0		11.0
48.4	35.0		11.0
43.4	40.0		11.0
38.4	45.0		11.0
33.4	50.0		11.0
28.4	55.0		11.0
23.4	60.0		11.0
18.4	65.0		11.0
13.4	70.0		11.0
8.4	75.0		11.0
3.4	80.0		11.0
-1.6	85.0		11.0
-6.6	90.0		11.0
-11.6	95.0		11.0
-16.6	100.0		11.0
-21.6	105.0		11.0
-26.6	110.0		11.0
-31.6	115.0		11.0
-36.6	120.0		11.0
-41.6	125.0		11.0
-46.6	130.0		11.0
-51.6	135.0		11.0
-56.6	140.0		11.0
-61.6	145.0		11.0
-66.6	150.0		11.0
-71.6	155.0		11.0
-76.6	160.0		11.0
-81.6	165.0		11.0
-86.6	170.0		11.0
-91.6	175.0		11.0
-96.6	180.0		11.0
-101.6	185.0		11.0
-106.6	190.0		11.0
-111.6	195.0		11.0
-116.6	200.0		11.0
-121.6	205.0		11.0
-126.6	210.0		11.0
-131.6	215.0		11.0
-136.6	220.0		11.0
-141.6	225.0		11.0
-146.6	230.0		11.0
-151.6	235.0		11.0
-156.6	240.0		11.0
-161.6	245.0		11.0
-166.6	250.0		11.0
-171.6	255.0		11.0
-176.6	260.0		11.0
-181.6	265.0		11.0
-186.6	270.0		11.0
-191.6	275.0		11.0
-196.6	280.0		11.0
-201.6	285.0		11.0
-206.6	290.0		11.0
-211.6	295.0		11.0
-216.6	300.0		11.0
-221.6	305.0		11.0
-226.6	310.0		11.0
-231.6	315.0		11.0
-236.6	320.0		11.0
-241.6	325.0		11.0
-246.6	330.0		11.0
-251.6	335.0		11.0
-256.6	340.0		11.0
-261.6	345.0		11.0
-266.6	350.0		11.0
-271.6	355.0		11.0
-276.6	360.0		11.0
-281.6	365.0		11.0
-286.6	370.0		11.0
-291.6	375.0		11.0
-296.6	380.0		11.0
-301.6	385.0		11.0
-306.6	390.0		11.0
-311.6	395.0		11.0
-316.6	400.0		11.0
-321.6	405.0		11.0
-326.6	410.0		11.0
-331.6	415.0		11.0
-336.6	420.0		11.0
-341.6	425.0		11.0
-346.6	430.0		11.0
-351.6	435.0		11.0
-356.6	440.0		11.0
-361.6	445.0		11.0
-366.6	450.0		11.0
-371.6	455.0		11.0
-376.6	460.0		11.0
-381.6	465.0		11.0
-386.6	470.0		11.0
-391.6	475.0		11.0
-396.6	480.0		11.0
-401.6	485.0		11.0
-406.6	490.0		11.0
-411.6	495.0		11.0
-416.6	500.0		11.0
-421.6	505.0		11.0
-426.6	510.0		11.0
-431.6	515.0		11.0
-436.6	520.0		11.0
-441.6	525.0		11.0
-446.6	530.0		11.0
-451.6	535.0		11.0
-456.6	540.0		11.0
-461.6	545.0		11.0
-466.6	550.0		11.0
-471.6	555.0		11.0
-476.6	560.0		11.0
-481.6	565.0		11.0
-486.6	570.0		11.0
-491.6	575.0		11.0
-496.6	580.0		11.0
-501.6	585.0		11.0
-506.6	590.0		11.0
-511.6	595.0		11.0
-516.6	600.0		11.0
-521.6	605.0		11.0
-526.6	610.0		11.0
-531.6	615.0		11.0
-536.6	620.0		11.0
-541.6	625.0		11.0
-546.6	630.0		11.0
-551.6	635.0		11.0
-556.6	640.0		11.0
-561.6	645.0		11.0
-566.6	650.0		11.0
-571.6	655.0		11.0
-576.6	660.0		11.0
-581.6	665.0		11.0
-586.6	670.0		11.0
-591.6	675.0		11.0
-596.6	680.0		11.0
-601.6	685.0		11.0
-606.6	690.0		11.0
-611.6	695.0		11.0
-616.6	700.0		11.0
-621.6	705.0		11.0
-626.6	710.0		11.0
-631.6	715.0		11.0
-636.6	720.0		11.0
-641.6	725.0		11.0
-646.6	730.0		11.0
-651.6	735.0		11.0
-656.6	740.0		11.0
-661.6	745.0		11.0
-666.6	750.0		11.0
-671.6	755.0		11.0
-676.6	760.0		11.0
-681.6	765.0		11.0
-686.6	770.0		11.0
-691.6	775.0		11.0
-696.6	780.0		11.0
-701.6	785.0		11.0
-706.6	790.0		11.0
-711.6	795.0		11.0
-716.6	800.0		11.0
-721.6	805.0		11.0
-726.6	810.0		11.0
-731.6	815.0		11.0
-736.6	820.0		11.0
-741.6	825.0		11.0
-746.6	830.0		11.0
-751.6	835.0		11.0
-756.6	840.0		11.0
-761.6	845.0		11.0
-766.6	850.0		11.0
-771.6	855.0		11.0
-776.6	860.0		11.0
-781.6	865.0		11.0
-786.6	870.0		11.0
-791.6	875.0		11.0
-796.6	880.0		11.0
-801.6	885.0		11.0
-806.6	890.0		11.0
-811.6	895.0		11.0
-816.6	900.0		11.0
-821.6	905.0		11.0
-826.6	910.0		11.0
-831.6	915.0		11.0
-836.6	920.0		11.0
-841.6	925.0		11.0
-846.6	930.0		11.0
-851.6	935.0		11.0
-856.6	940.0		11.0
-861.6	945.0		11.0
-866.6	950.0		11.0
-871.6	955.0		11.0
-876.6	960.0		11.0
-881.6	965.0		11.0
-886.6	970.0		11.0
-891.6	975.0		11.0
-896.6	980.0		11.0
-901.6	985.0		11.0
-906.6	990.0		11.0
-911.6	995.0		11.0
-916.6	1000.0		11.0

Continue on Sheet 2

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Sketches 103 (C. & J. 100)

1016 Nr

Charleston, W. Va.

1. The 2nd. Street "Boulevard" area
2. 2nd. Street "Boulevard" area, glassed
3. 2nd. Street "Boulevard" area, glassed
4. 2nd. Street "Boulevard" area, glassed
5. 2nd. Street "Boulevard" area, glassed
6. 2nd. Street "Boulevard" area, glassed
7. 2nd. Street "Boulevard" area, glassed
8. 2nd. Street "Boulevard" area, glassed
9. 2nd. Street "Boulevard" area, glassed
10. 2nd. Street "Boulevard" area, glassed

1. 2nd. Street "Boulevard" area, glassed
2. 2nd. Street "Boulevard" area, glassed
3. 2nd. Street "Boulevard" area, glassed
4. 2nd. Street "Boulevard" area, glassed
5. 2nd. Street "Boulevard" area, glassed
6. 2nd. Street "Boulevard" area, glassed
7. 2nd. Street "Boulevard" area, glassed
8. 2nd. Street "Boulevard" area, glassed
9. 2nd. Street "Boulevard" area, glassed
10. 2nd. Street "Boulevard" area, glassed

1. 2nd. Street "Boulevard" area, glassed
2. 2nd. Street "Boulevard" area, glassed
3. 2nd. Street "Boulevard" area, glassed
4. 2nd. Street "Boulevard" area, glassed
5. 2nd. Street "Boulevard" area, glassed
6. 2nd. Street "Boulevard" area, glassed
7. 2nd. Street "Boulevard" area, glassed
8. 2nd. Street "Boulevard" area, glassed
9. 2nd. Street "Boulevard" area, glassed
10. 2nd. Street "Boulevard" area, glassed

Hole No.

DRILLING LOG		DIVISION	INSTALLATION	SHEET		
		South Atlantic	Charleston District			
1. PROJECT		10. SIZE AND TYPE OF BIT 1 3/8" * 5/8" 11				
2. LOCATION (Coordinates of Station)		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)				
N577,800 42,315,260		MSL				
3. DRILLING AGENCY		12. MANUFACTURER'S DESIGNATION OF DRILL				
Mobile District		Falling 314				
4. HOLE NO. (As shown on drawing title and file number)		13. TOTAL NO. OF OVER-CAST REED BURDEN SAMPLES TAKEN				
IT-13A		0				
5. NAME OF DRILLER		14. TOTAL NUMBER CORE BOXES				
Parden		1				
6. DIRECTION OF HOLE		15. ELEVATION GROUND WATER				
VERTICAL INCLINED DEG. FROM VERT.		75				
7. THICKNESS OF OVERBURDEN		16. DATE HOLE				
34.0		STARTED 24 July 1967				
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE				
11.4		8.0				
9. TOTAL DEPTH OF HOLE		18. TOTAL CORE RECOVERY FOR BORING				
45.4		19. SIGNATURE OF INSPECTOR				
		C. Davis				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth weathering, etc., if significant)
a	b	c	d	e	f	g
84.0	0.0		top of hole			
			SM-silty fine sand-tan		1	
79.0	5.0		SC-clayey fine sand-tan&gray		2	
74.0	10.0			MC 39.4	3	
69.0	15.0		MH-silty clay w/sand layers gray		4	
64.0	20.0			MC 61.0		
59.0	25.0				5	
54.0	30.0		SC-calcareous clayey sand w/ limestone gray			

Continue on Sheet 2

67

DRILLING LOG (Cont Sheet)

DATE & TOP OF HOLE

84.0'

Hole No.

IT-13A

Upper River Rediversion

Charleston District

INSTALLATION

CLASSIFICATION OF MATERIAL

CORE BOX BY
RECOVER SAMPLE
ERY INC

REMARKS



SC-Gray calcareous, clayey
sand with limestone

6

Blow/Ft

30

30

+100

Limestone "Coquina" gray
vuggy shrap rock. Moderately
hard, slightly glauconitic,
argillaceous and sandy.
Competent rock to 36.9,
thereafter, oddly broken,
highly argillaceous

Core
Box 1

Pull-1

34.0-36.4

Rec 2.4

Run 2.4

C/L 0.0

Pull-2

36.4-41.4

Run 5.0

Rec 1.2

C/L 3.8

No Recovery

Pull-3

41.4-45.4

Run 4.0

Rec 0.0

C/L 4.0

Bottom of Hole 45.4'

Hole No. 117

DRILLING LOG		DIVISION	INSTALLATION	SHEET
1. PROJECT		South Atlantic	Charleston District	CE 2 487
2. LOCATION (Coordinate or Station)		10. SIZE AND TYPE OF BIT: 3 7/8" x S.S. & H.B.		
3. DRILLING AGENCY		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		
4. HOLE NO. (As shown on drawing title and title sheet)		MSL		
5. NAME OF DRILLER		12. MANUFACTURER'S DESIGNATION OF DRILL		
6. DIRECTION OF HOLE		Falling 314		
7. TH. KNIFE OR CORBUEN		13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN		
8. DEPTH DRILLED INTO ROCK		14. TOTAL NUMBER CORE BOXES		
9. TOTAL DEPTH OF HOLE		15. ELEVATION GROUND WATER		
ELEVATION OF TOP OF HOLE		16. DATE HOLE		
CLASSIFICATION OF MATERIALS (Description)		17. ELEVATION TOP OF HOLE		
CORE RECOVERY		18. TOTAL CORE RECOVERY FOR BORING		
BOX OR SAMPLE NO.		19. SIGNATURE OF INSPECTOR		
REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)		C. Davis		
a	b	c	d	e
85.0	0.0	Top of Hole	SM-Silty fine sand - tan	1
80.0	5.0	MC	SC-Clayey fine sand with string binder - tan, red & gray	2
75.0	10.0	MC	SC-Silty fine sand with mica tan & red	3
70.0	15.0	MC	CH-Fat clay - tan & gray	4
65.0	20.0	MC	MH-Silty Clay	5
60.0	25.0	MC	SM-Silty fine and med. sand green	6
55.0	30.0			

Continue on Sheet 2

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DRILLING LOG (Cont Sheet)

ELEVATION OF TOP OF HOLE

85.0

Hole No. IT-14

Cooper River Rediversion

Charleston District

SHEET 2

OF 2 SHEETS

LEGEND

CLASS OF MATERIAL

% CORE
RECOVERY

BOX OR
SAMPLE
NO

REMARKS

Drilling time, water loss, depth of
weathering, etc. if significant

Blow/Ft

33.0 32.0 // SC-Calcareous clayey sand
with shell-green
Top of Rock 32.0'

30.0 31.0 Limestone, light gray "coquina"
well cemented porous (similar
to 11-10) 32.1-33.1 zone of
large shells

33.1-39.1 "coquina" with sandy
argillaceous material some
glauconite also present

31.0 32.0 Sand, clayey-transition zone,
dark gray, contains numerous
leached shells

39.2 40.0 Sand-small amounts of sand
retracted & determined to be
SM material-gray

Core
Box
1

Pull-1
32.0-36.1
Run 4.1
Rec 3.1

C/L 1.0

Core
Box
2

Pull-2
36.1-38.3
Run 2.2
Pull-3
38.3-40.3

Rec 0.9

C/L 1.3

Rec 2.0

C/L 0.0

Core
Box
3

Run 2.0
Pull-4
40.3-45.1
Run 4.8
Rec 0.0

C/L 4.8

Bottom of Hole 45.1'

Hole No. 1-44A

DRILLING LOG		DIVISION	INSTALLATION	SHEET		
PROJECT Cooper River Rediversion		South Atlantic	Charleston District	OF 2 SHEETS		
LOCATION (Coordinates or Station) N577.180 E2,315.540		10. SIZE AND TYPE OF BIT 1 3/8" & SSS 4x3 1/2" 35L				
DRILLING AGENCY Mobile District		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL				
HOLE NO. (As shown on drawing title and file number) IT-14A		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314				
NAME OF DRILLER Parden		13. TOTAL NO. OF OVER- (DISTURBED) UNDISTURBED BURDEN SAMPLES TAKEN 8				
DIRECTION OF HOLE X VERTICAL INCINED DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES 1				
THICKNESS OF OVERBURDEN 31.0		15. ELEVATION GROUND WATER 78.0				
DEPTH DRILLED INTO ROCK 13.5		16. DATE HOLE STARTED COMPLETED 24 June 75 24 June 75				
TOTAL DEPTH OF HOLE 44.5'		17. ELEVATION TOP OF HOLE 83.5				
		18. TOTAL CORE RECOVERY FOR BORING				
		19. SIGNATURE OF INSPECTOR C. Davis				
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
83.5	0.0		Top of Hole SM-Gray to Tan	MC 14.5%	1	
78.5	5.0		Very silty		2	Mix color-contains some (water table) Clay binder
73.5	10.0		MH-Silty - Gray	MC 44.6%	3	
68.5	15.0		Gray Sand Layers @ 0.3 ft. - SM		4	
63.5	20.0		MH-Silty - Gray	MC 74.7%	5	
58.5	25.0		SM-Gray & green sand		6	Gray sand (0.2 ft. thick)
53.5	30.0			MC 22.7%		
			continue on sheet 2			

71

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
		83.5		IT-14A		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		Charleston District		2		
				OF 2 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS <i>Drilling time, water loss, depth of weathering, etc. if significant</i>
						R Blow/Ft
			Top of Rock 31.0		7	
38.5	35.0		Limestone, gray, crumbly consists of pebble size shell rubble.			Pull-1 31.0-35.0 58 Run 4.0 92 Rec 2.0 C/L 2.0
43.5	40.0		Limestone, gray, moderately hard coquina, sound rock		Core Box 1	Pull-2 35.0-39.5 Run 4.5 Rec 2.7 C/L 1.8
39.0	44.5		Sandstone, gray, soft to moderately hard friable, calcareous			Pull-3 39.5-44.5 Run 5.0 Rec 2.5 C/L 2.5
Bottom of Hole 44.5'						

Hole No. 17-17

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Charleston District		SHEET OF 2 SHEETS	
1. PROJECT Cooper River Rediversion			10. SIZE AND TYPE OF BIT 1 3/8" ϕ SSS 1 1/2" ID			
2. LOCATION (Coordinates or Station) N376,250 E2,315,950			11. DATUM FOR ELEVATION SHOWN (THM or MSL) MSL			
3. DRILLING AGENCY Mobile District			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-15			13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN ()			
5. NAME OF DRILLER Parden			14. TOTAL NUMBER CORE BOXES 5			
6. DIRECTION OF HOLE A. VERTICAL B. INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER 75.5			
7. THICKNESS OF OVERBURDEN 54.4			16. DATE HOLE STARTED 16 May 75			
8. DEPTH RILLED INTO ROCK 12.6			17. ELEVATION TOP OF HOLE 84.5			
9. TOTAL DEPTH OF HOLE 47.0			18. TOTAL CORE RECOVERY FOR BORING 81.0			
			19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
84.5	0.0		Top of Hole			
79.5	5.0		SC-Clayey fine sand - tan		1	
74.5	10.0		SM-Silty fine sand w/clay layers - tan & gray		2	
69.5	15.0		CH-Fat clay - tan		3	
64.5	20.0		MH-Silty clay - dark gray		4	
59.5	25.0				5	
54.5	30.0		SC-Calcareous clayey sand w/shell - green			
Continue on Sheet 2						

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

84.5'

hole No. IT-15

INSTALLATION

SHEET

2

OF 2 SHEETS

Project or Revision

Charleston District

DEPTH (feet)

CLASSIFICATION OF MATERIALS

% CORE RECOVERY

BOX OR SAMPLE NO.

REMARKS

Drilling and water level depth of

penetration, etc. if applicable

Blow/ft



SC-falcareous clayey sand
w. shell - green

46

55

Top of Rock 54.1'

Recess. 34 100/04' 126

Limestone, light gray well
cemented, rock consists of
numerous small shell frag-
ments with few large snells

Core
Box 1

Run 1 - 1 C/L 0.0
34.4 - 37.1
Run 2.7 Rec 2.7

37.3-37.4 zone of loose glau-
conitic sand.

Core
Box 2

Run 1 - 2
37.1 - 42.6
Run 4.5
Box 1.7
C/L 0.0

Sand clayey-light gray con-
tains numerous large shells &
fragments

Contains numerous leached
fossil fragments (Like IT-9A
20-25.4)

Core
Box 3

Run 1 - 3
42.6 - 47.0
Run 4.4
Rec 2.2
C/L 0.0

Bottom of hole 47.0'

Hole No. 11

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Charleston District	SHEET OF 1 SHEETS
1. PROJECT		10. SIZE AND TYPE OF BIT 1 1/2" S.W. S.S. + 1/2" S.S.		
2. LOCATION OF DRILL LOCATION		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		
3. LOCATION OF Estimates or Station		MSL		
4. HOLE NO. (As shown on drawing, the well log number)		12. MANUFACTURER'S DESIGNATION OF DRILL		
5. DRILLING AGENCY		Falling 511		
6. HOLE NO. (As shown on drawing, the well log number)		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		
7. NAME OF DRILLER		14. TOTAL NUMBER CORE BOXES		
8. DIRECTION OF HOLE		15. ELEVATION GROUND WATER		
9. TOTAL DEPTH OF HOLE		16. DATE HOLE STARTED COMPLETED		
		12 May 75 12 May 75		
		17. ELEVATION TOP OF HOLE 85.8		
		18. TOTAL CORE RECOVERY FOR BORING		
		19. SIGNATURE OF INSPECTOR		
		C. Davis		

ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
85.8	0.0	Top of Hole			
		SC-Clayey fine sand tan & gray		1	
78.8	7.0		MC 18.5%	2	
		gray		3	
73.5	12.3			4	
71.3	14.5	SM-Silty fine and med. sand gray & tan		5	
68.8	17.0			6	
64.3	21.5	SH - Silty Clay - Gray	MC 52.2%	7	
58.5	27.3			8	
56.3	29.5	SM-Silty fine and med. sand w/gravel - Green & Brown		9	
53.8	32.0	Continue on sheet 2			

75

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

83.8'

Hole No.

11-10

INSTALLATION

SHEET 2

Upper River Re diversion

Charleston District

2

ELEVATION	DEPTH	DIAMETER	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	SAMPLE NO.	REMARKS Notes on core or log, depth of penetration, etc. if applicable
			SM-silty fine and med. sand with gravel- green & brown	MC	20.1	Blow/Ft
						9
						12
						22
43.5	39.0					34
			SC-Calcareous clayey sand with limestone			38
						43
43.6	40.0					48
						54
						57
						52

Bottom of Hole 45.0'

Hole No.

DRILLING LOG		INSTALLATION		SHEET	
1. PROJECT		2. SIZE AND TYPE OF BIT		3. ELEVATION FOR ELEVATION SHOWN (THM. MNE)	
4. LOCATION (City, County, State)		5. MANUFACTURER'S DESIGNATION OF DRILL		6. DATE	
7. DRILLING AGENCY		8. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		9. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	
10. NAME OF WELLER		11. TOTAL NUMBER CORE BOXES		12. ELEVATION GROUND WATER	
13. DIRECTION OF HOLE		14. DATE HOLE		15. ELEVATION TOP OF HOLE	
16. NAME OF WELLER		17. TOTAL CORE RECOVERY FOR RING		18. SIGNATURE OF INSPECTOR	
19. TOTAL DEPTH OF HOLE		20. SIGNATURE OF INSPECTOR		21. SIGNATURE OF INSPECTOR	
22. ELEVATION OF HOLE		23. CLASSIFICATION OF MATERIALS		24. CORE BOX OR RECOVERY SAMPLE NO.	
25. ELEVATION OF HOLE		26. CLASSIFICATION OF MATERIALS		27. CORE BOX OR RECOVERY SAMPLE NO.	
28. ELEVATION OF HOLE		29. CLASSIFICATION OF MATERIALS		30. CORE BOX OR RECOVERY SAMPLE NO.	
31. ELEVATION OF HOLE		32. CLASSIFICATION OF MATERIALS		33. CORE BOX OR RECOVERY SAMPLE NO.	
34. ELEVATION OF HOLE		35. CLASSIFICATION OF MATERIALS		36. CORE BOX OR RECOVERY SAMPLE NO.	
37. ELEVATION OF HOLE		38. CLASSIFICATION OF MATERIALS		39. CORE BOX OR RECOVERY SAMPLE NO.	
40. ELEVATION OF HOLE		41. CLASSIFICATION OF MATERIALS		42. CORE BOX OR RECOVERY SAMPLE NO.	
43. ELEVATION OF HOLE		44. CLASSIFICATION OF MATERIALS		45. CORE BOX OR RECOVERY SAMPLE NO.	
46. ELEVATION OF HOLE		47. CLASSIFICATION OF MATERIALS		48. CORE BOX OR RECOVERY SAMPLE NO.	
49. ELEVATION OF HOLE		50. CLASSIFICATION OF MATERIALS		51. CORE BOX OR RECOVERY SAMPLE NO.	
52. ELEVATION OF HOLE		53. CLASSIFICATION OF MATERIALS		54. CORE BOX OR RECOVERY SAMPLE NO.	
55. ELEVATION OF HOLE		56. CLASSIFICATION OF MATERIALS		57. CORE BOX OR RECOVERY SAMPLE NO.	
58. ELEVATION OF HOLE		59. CLASSIFICATION OF MATERIALS		60. CORE BOX OR RECOVERY SAMPLE NO.	
61. ELEVATION OF HOLE		62. CLASSIFICATION OF MATERIALS		63. CORE BOX OR RECOVERY SAMPLE NO.	
64. ELEVATION OF HOLE		65. CLASSIFICATION OF MATERIALS		66. CORE BOX OR RECOVERY SAMPLE NO.	
67. ELEVATION OF HOLE		68. CLASSIFICATION OF MATERIALS		69. CORE BOX OR RECOVERY SAMPLE NO.	
70. ELEVATION OF HOLE		71. CLASSIFICATION OF MATERIALS		72. CORE BOX OR RECOVERY SAMPLE NO.	
73. ELEVATION OF HOLE		74. CLASSIFICATION OF MATERIALS		75. CORE BOX OR RECOVERY SAMPLE NO.	
76. ELEVATION OF HOLE		77. CLASSIFICATION OF MATERIALS		78. CORE BOX OR RECOVERY SAMPLE NO.	
79. ELEVATION OF HOLE		80. CLASSIFICATION OF MATERIALS		81. CORE BOX OR RECOVERY SAMPLE NO.	
82. ELEVATION OF HOLE		83. CLASSIFICATION OF MATERIALS		84. CORE BOX OR RECOVERY SAMPLE NO.	
85. ELEVATION OF HOLE		86. CLASSIFICATION OF MATERIALS		87. CORE BOX OR RECOVERY SAMPLE NO.	
88. ELEVATION OF HOLE		89. CLASSIFICATION OF MATERIALS		90. CORE BOX OR RECOVERY SAMPLE NO.	
91. ELEVATION OF HOLE		92. CLASSIFICATION OF MATERIALS		93. CORE BOX OR RECOVERY SAMPLE NO.	
94. ELEVATION OF HOLE		95. CLASSIFICATION OF MATERIALS		96. CORE BOX OR RECOVERY SAMPLE NO.	
97. ELEVATION OF HOLE		98. CLASSIFICATION OF MATERIALS		99. CORE BOX OR RECOVERY SAMPLE NO.	
100. ELEVATION OF HOLE		101. CLASSIFICATION OF MATERIALS		102. CORE BOX OR RECOVERY SAMPLE NO.	

Continue on Sheet 2

77



DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 85.7'

Hole No. 117-113

Drill Stem Stringer and/or diversion _____
 CLASSIFICATION OF MATERIAL _____
 REMARKS _____

Blow ft

	low-clayey fine sand with high liquid limit - gray	10	15
		7	
	with some shell fragments	12	
	gray, green & brown	58.50	120

Bottom of Hole 36.0'

Top of Rock

[illegible]

44160

Author's note

53

•

34

10

•

52

11

2

11. *Chrysomelidae* (100%)

DRILLING LOG		DIVISION	INSTALLATION	Hole No.	SHEET	
1. PROJECT		2. LOCATION (Coordinates of Station)		10. SIZE AND TYPE OF BIT	OF	
3. DRILLING AGENCY		4. HOLE NO. (As shown on drawing and file number)		11. DATUM FOR ELEVATION SHOWN (IRM, MSL)	12. MANUFACTURER'S DESIGNATION OF DRILL	
5. NAME OF DRILLER		6. DIRECTION OF HOLE		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	14. TOTAL NUMBER CORE BOXES	
7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK		15. ELEVATION GROUND WATER	16. DATE HOLE	
9. TOTAL DEPTH OF HOLE		17. ELEVATION TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING	19. SIGNATURE OF INSPECTOR	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth weathering, etc., if significant)
80.2	0.0		Top of Hole			
			SC-clayey fine sand - tan		1	
75.2	5.0		Gray & tan		2	
70.2	10.0		SN-silty fine and gray, red & tan		3	
65.2	15.0		Gray & yellow		4	
60.2	20.0				5	
55.2	25.0				6	
50.2	30.0				7	

DRILLING LOG (Cont Sheet)

Project: Redirection

Site: 100-100-100

Location: 100-100-100

Operator: J. J. J.

Log No. 11-17

Hole No. 11-17

Remarks

SM-silty fine sand with clay layers gray

10

11

12

13

14

15

16

17

18

19

20

SM-silty fine sand with clay layers gray

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

82

Hole No. 1-1

DRILLING LOG		DIVISION	INSTALLATION		SHEET	
PROJECT		South Atlantic	Charleston District		OF 2 SHEETS	
1. LOCATION (Coordinates of Station)		10. SIZE AND TYPE OF BIT 1 3/4" A BSS G 100-10				
2. LOCATION (Coordinates of Station)		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)				
3. DRILLING AGENCY		12. MANUFACTURER'S DESIGNATION OF DRILL				
4. HOLE NO. (As shown on drawing title and file number)		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN				
5. NAME OF DRILLER		14. TOTAL NUMBER OF CORE BOXES				
6. DIRECTION OF HOLE		15. ELEVATION ON GROUND WATER				
7. THICKNESS OF OVERBURDEN		16. DATE HOLE				
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE				
9. TOTAL DEPTH OF HOLE		18. TOTAL CORE RECOVERY FOR BORING				
		19. SIGNATURE OF INSPECTOR				
		C. Davis				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
78.2	0.0		Top of Hole			Blows FT
			CL-Fine Sandy Clay Gray & Tan	MC 18.4	1	
73.2	5.0				2	
			SM-Silty Fine Sand W/Clay Layers - Gray		3	
68.2	10.0				4	
			W/Medium Sand	MC 21.3	5	
63.2	15.0					
58.2	20.0					
53.2	25.0					
48.2	30.0					

Continue on Sheet 2

83

DRILLING LOG (Cont Sheet)

Hole No. IT-18

Sheet 2

Log 2

REMARKS

Blow/Ft

Shale - Fine and Med. Sand
Gray

14

21

21

22

31

40

16

W/Sand layers - Dark Gray

10

Mo
29.4%

12

11

Bottom of hole 45.0'

Hole No. 1-19

DRILLING LOG		DIVISION	INSTALLATION	SHEET		
		South Atlantic	Charleston District	OF 2 SHEETS		
1 PROJECT		10 SIZE AND TYPE OF BIT: 3 8" x 455 & 4x52 BBL				
2 LOCATION (Coordinates, Elevation)		11 DATUM FOR ELEVATION SHOWN (TBM or MSL)				
N576,150 80,300		MSL				
3 DRILLING AGENCY		12 MANUFACTURER'S DESIGNATION OF DRILL				
Mobile District		Falling 314				
4 HOLE NO. (As shown on drawing, etc. and file number)		13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN				
1-19		7				
5 NAME OF DRILLER		14 TOTAL NUMBER CORE BOXES				
Parden		15 ELEVATION GROUND WATER				
6 DIRECTION OF HOLE		16 DATE HOLE STARTED COMPLETED				
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG FROM VERT		30 Apr 72 30 Apr 72				
7 THICKNESS OF OVERBURDEN		17 ELEVATION TOP OF HOLE				
45.0'		78.5				
8 DEPTH DRILLED INTO ROCK		18 TOTAL CORE RECOVERY FOR BORING				
0		19 SIGNATURE OF INSPECTOR				
9 TOTAL DEPTH OF HOLE		C. Davis				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	1. CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
78.5	0.0		Top of Hole			
			SC-clayey fine sand with strong binder - tan & red		1	
73.5	5.0			MC 18.3%	2	
68.5	10.0		SM-silty fine sand with clay layers - gray	MC 22.5%	3	
63.5	15.0		Silty fine sand - yellow & gray		4	
58.5	20.0		Gray & tan		5	
53.5	25.0					
48.5	30.0					
Continue on sheet 2						

85

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

78.5

Hole No. 1T-19

SHEET 2

OF 2 SHEETS

Upper River Rediversion

INSTALLATION

Charleston District

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS
(Description)

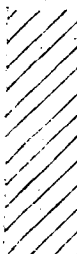
TO CORRECTION FOR
RECOVERY SAMPLE
ERY NO

REMARKS
(Drilling time, water level, depth of
penetration, etc., in parentheses)

Blow/Ft

78.5

0



SC-calcareous clayey sand-tan

MC

17.4

13

17

24

27

19

17

30

28

31

38

36.5

40.0



SM-silty fine sand with clay
layers - dark gray

MC

33.5



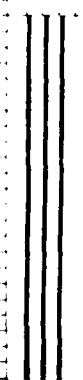
33.5

45.0



Bottom of Hole 45.0'

86

DRILLING LOG		DIVISION	INSTALLATION	Hole No.	SHEET	
		South Atlantic	CHIEF OF BUREAU		OF SHEETS	
1. PROJECT			10. SIZE AND TYPE OF BIT			
Cooper River Diversion			11. DATUM FOR ELEVATION SHOWN, TRM, MSL			
2. LOCATION (Coordinates or Station)			12. MANUFACTURER'S DESIGNATION OF DRILL			
N572,170 E2,311,180			13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN			
3. DRILLING AGENCY			14. TOTAL NUMBER CORE BOXES			
Mobile Drilling			15. ELEVATION GROUND WATER			
4. HOLE NO. (As shown on drawing, etc. and file number)			16. DATE HOLE			
11-20			25 Apr			
5. NAME OF DRILLER			17. ELEVATION TOP OF HOLE			
Gordon			18. TOTAL CORE RECOVERY PER BORING			
6. DIRECTION OF HOLE			19. SIGNATURE OF INSPECTOR			
X VERTICAL			C. Davis			
7. THICKNESS OF OVERBURDEN						
1.5						
8. DEPTH DRILLED INTO ROCK						
0						
9. TOTAL DEPTH OF HOLE						
47.0						
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
78.1	0.0		Top of Hole			
72.1	6.0		SC-clayey fine sand with strong binder - tan & gray	MC	21.1	
68.1	10.1		SM-silty fine and med. sand with clay layers - gray & tan	MC	22.1	
65.0	13.0		MB-silty clay with sand layers - gray	MC	23.1	
63.1	14.9		SM-silty fine sand - tan	MC	24.1	
58.1	20.1		MB-silty clay with sand layers - gray	MC	25.1	
48.1	30.0					

Continued on sheet 2

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

78.1

Hole No. IT-20

SHEET 2
OF 2 SHEETS

INSTALLATION

Charleston District

Upper River Rediversion

LEGEND

CLASSIFICATION OF MATERIALS
Description

% CORE BOX OR
RECOVER SAMPLE
ERY NO

REMARKS
Drilling time, water loss, depth,
weathering, etc. if significant

Blow/Ft

SM-silty fine sand with clay
layers - gray

MC
24.9% 7

22

12

10

10

12

14

16

Dark gray

8

Bottom of Hole 40.5'

88

Drilling Log		DIVISION		INSTALLATION		Hole No.	
PROJECT		South Atlantic		DATE			
COOPER RIVER RELEVATION				TO DATUM (SEE NOTE ON DRAWING)			
LOCATION (Coordinate)		N 575,930		E 113,570			
DRILLING AGENCY				MAX. DEPTH		100.0	
MOBILE UNIT		10-21		TOTAL NUMBER OF SAMPLES		1	
NAME OF DRILLER		Parker		TOTAL NUMBER OF HOURS		1.0	
DIRECTION OF DRILL		X VERTICAL		ELEVATION		100.0	
THICKNESS OF SOIL		40.5		ELEVATION OF SOIL		100.0	
DEPTH OF SOIL		0		ELEVATION OF SOIL		100.0	
TOTAL DEPTH OF HOLE		40.5		ELEVATION OF HOLE		100.0	
ELEVATION		100.0		REMARKS			
CLASSIFICATION OF MATERIALS		(Description)		CORE RECOVERY		BOX OR SAMPLE NO.	
79.0 0.0		Top of Hole					
74.5 5.0		SC-clayey fine sand with strong binder - tan & gray					
69.5 10.0							
64.5 15.0		SM-silty fine sand - tan & gray					
59.5 20.0		MH-silty clay - dark gray					
54.5 25.0		SM-silty fine and med. sand yellow & gray					
52.0 27.5		MH-silty clay with sand layers					
49.5 30.0		OH-fat clay - gray					
		SM-silty fine sand - gray					
		Continue on Sheet 2					

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

79.5

Hole No

IT-21

Sheet 2

TOTAL AREA

Charleston District

12.7 2 sheets

Proper River Rediversion

CLASSIFICATION OF WATER

Description

% CORE
RECOVERY

BOX NO
SAMPLE NO

REMARKS

1. Time from water to top of
weathering etc. if known

Blow/Ft

SM-silty fine sand - gray

9

4

2

and med. sand - light gray

35

34

10

14

with sand layers

11

3

7

bottom of Hole 40.5'

DRILLING LOG		DIVISION	DATE	Hole #	DATE
1. PROJECT		South Atlantic			
2. LOCATION (Continental Shelf Station)					
3. DRILLING AGENCY					
4. HOLE NO. (As shown in drawing and file number)					
5. NAME OF DRILLER					
6. DIRECTION OF HOLE					
7. THICKNESS OF OVERBURDEN					
8. DEPTH DRILLED INTO ROCK					
9. TOTAL DEPTH OF WELL					
ELEVATION	DEPTH (feet)	CLASSIFICATION OF MATERIAL (Description)	REMARKS		
79.0	0.2	1.0			
78.8	0.2	1.0			
78.6	0.2	1.0			
78.4	0.2	1.0			
78.2	0.2	1.0			
78.0	0.2	1.0			
77.8	0.2	1.0			
77.6	0.2	1.0			
77.4	0.2	1.0			
77.2	0.2	1.0			
77.0	0.2	1.0			
76.8	0.2	1.0			
76.6	0.2	1.0			
76.4	0.2	1.0			
76.2	0.2	1.0			
76.0	0.2	1.0			
75.8	0.2	1.0			
75.6	0.2	1.0			
75.4	0.2	1.0			
75.2	0.2	1.0			
75.0	0.2	1.0			
74.8	0.2	1.0			
74.6	0.2	1.0			
74.4	0.2	1.0			
74.2	0.2	1.0			
74.0	0.2	1.0			
73.8	0.2	1.0			
73.6	0.2	1.0			
73.4	0.2	1.0			
73.2	0.2	1.0			
73.0	0.2	1.0			
72.8	0.2	1.0			
72.6	0.2	1.0			
72.4	0.2	1.0			
72.2	0.2	1.0			
72.0	0.2	1.0			
71.8	0.2	1.0			
71.6	0.2	1.0			
71.4	0.2	1.0			
71.2	0.2	1.0			
71.0	0.2	1.0			
70.8	0.2	1.0			
70.6	0.2	1.0			
70.4	0.2	1.0			
70.2	0.2	1.0			
70.0	0.2	1.0			
69.8	0.2	1.0			
69.6	0.2	1.0			
69.4	0.2	1.0			
69.2	0.2	1.0			
69.0	0.2	1.0			
68.8	0.2	1.0			
68.6	0.2	1.0			
68.4	0.2	1.0			
68.2	0.2	1.0			
68.0	0.2	1.0			
67.8	0.2	1.0			
67.6	0.2	1.0			
67.4	0.2	1.0			
67.2	0.2	1.0			
67.0	0.2	1.0			
66.8	0.2	1.0			
66.6	0.2	1.0			
66.4	0.2	1.0			
66.2	0.2	1.0			
66.0	0.2	1.0			
65.8	0.2	1.0			
65.6	0.2	1.0			
65.4	0.2	1.0			
65.2	0.2	1.0			
65.0	0.2	1.0			
64.8	0.2	1.0			
64.6	0.2	1.0			
64.4	0.2	1.0			
64.2	0.2	1.0			
64.0	0.2	1.0			
63.8	0.2	1.0			
63.6	0.2	1.0			
63.4	0.2	1.0			
63.2	0.2	1.0			
63.0	0.2	1.0			
62.8	0.2	1.0			
62.6	0.2	1.0			
62.4	0.2	1.0			
62.2	0.2	1.0			
62.0	0.2	1.0			
61.8	0.2	1.0			
61.6	0.2	1.0			
61.4	0.2	1.0			
61.2	0.2	1.0			
61.0	0.2	1.0			
60.8	0.2	1.0			
60.6	0.2	1.0			
60.4	0.2	1.0			
60.2	0.2	1.0			
60.0	0.2	1.0			
59.8	0.2	1.0			
59.6	0.2	1.0			
59.4	0.2	1.0			
59.2	0.2	1.0			
59.0	0.2	1.0			
58.8	0.2	1.0			
58.6	0.2	1.0			
58.4	0.2	1.0			
58.2	0.2	1.0			
58.0	0.2	1.0			
57.8	0.2	1.0			
57.6	0.2	1.0			
57.4	0.2	1.0			
57.2	0.2	1.0			
57.0	0.2	1.0			
56.8	0.2	1.0			
56.6	0.2	1.0			
56.4	0.2	1.0			
56.2	0.2	1.0			
56.0	0.2	1.0			
55.8	0.2	1.0			
55.6	0.2	1.0			
55.4	0.2	1.0			
55.2	0.2	1.0			
55.0	0.2	1.0			
54.8	0.2	1.0			
54.6	0.2	1.0			
54.4	0.2	1.0			
54.2	0.2	1.0			
54.0	0.2	1.0			
53.8	0.2	1.0			
53.6	0.2	1.0			
53.4	0.2	1.0			
53.2	0.2	1.0			
53.0	0.2	1.0			
52.8	0.2	1.0			
52.6	0.2	1.0			
52.4	0.2	1.0			
52.2	0.2	1.0			
52.0	0.2	1.0			
51.8	0.2	1.0			
51.6	0.2	1.0			
51.4	0.2	1.0			
51.2	0.2	1.0			
51.0	0.2	1.0			
50.8	0.2	1.0			
50.6	0.2	1.0			
50.4	0.2	1.0			
50.2	0.2	1.0			
50.0	0.2	1.0			
49.8	0.2	1.0			
49.6	0.2	1.0			
49.4	0.2	1.0			
49.2	0.2	1.0			
49.0	0.2	1.0			
48.8	0.2	1.0			
48.6	0.2	1.0			
48.4	0.2	1.0			
48.2	0.2	1.0			
48.0	0.2	1.0			
47.8	0.2	1.0			
47.6	0.2	1.0			
47.4	0.2	1.0			
47.2	0.2	1.0			
47.0	0.2	1.0			
46.8	0.2	1.0			
46.6	0.2	1.0			
46.4	0.2	1.0			
46.2	0.2	1.0			
46.0	0.2	1.0			
45.8	0.2	1.0			
45.6	0.2	1.0			
45.4	0.2	1.0			
45.2	0.2	1.0			
45.0	0.2	1.0			
44.8	0.2	1.0			
44.6	0.2	1.0			
44.4	0.2	1.0			
44.2	0.2	1.0			
44.0	0.2	1.0			
43.8	0.2	1.0			
43.6	0.2	1.0			
43.4	0.2	1.0			
43.2	0.2	1.0			
43.0	0.2	1.0			
42.8	0.2	1.0			
42.6	0.2	1.0			
42.4	0.2	1.0			
42.2	0.2	1.0			
42.0	0.2	1.0			
41.8	0.2	1.0			
41.6	0.2	1.0			
41.4	0.2	1.0			
41.2	0.2	1.0			
41.0	0.2	1.0			
40.8	0.2	1.0			
40.6	0.2	1.0			
40.4	0.2	1.0			
40.2	0.2	1.0			
40.0	0.2	1.0			
39.8	0.2	1.0			
39.6	0.2	1.0			
39.4	0.2	1.0			
39.2	0.2	1.0			
39.0	0.2	1.0			
38.8	0.2	1.0			
38.6	0.2	1.0			
38.4	0.2	1.0			
38.2	0.2	1.0			
38.0	0.2	1.0			
37.8	0.2	1.0			
37.6	0.2	1.0			
37.4	0.2	1.0			
37.2	0.2	1.0			
37.0	0.2	1.0			
36.8	0.2	1.0			
36.6	0.2	1.0			
36.4	0.2	1.0			
36.2	0.2	1.0			
36.0	0.2	1.0			
35.8	0.2	1.0			
35.6	0.2	1.0			
35.4	0.2	1.0			
35.2	0.2	1.0			
35.0	0.2	1.0			
34.8	0.2	1.0			
34.6	0.2	1.0			
34.4	0.2	1.0			
34.2	0.2	1.0			
34.0	0.2	1.0			
33.8	0.2	1.0			
33.6	0.2	1.0			
33.4	0.2	1.0			
33.2	0.2	1.0			
33.0	0.2	1.0			
32.8	0.2	1.0			
32.6	0.2	1.0			
32.4	0.2	1.0			
32.2	0.2	1.0			
32.0	0.2	1.0			
31.8	0.2	1.0		</	

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

79.0'

Hole No. 11-22

INSTALLATION

SHEET 2

Water Reclamation

Charleston District

OF 2 SHEETS

CLASSIFICATION OF MATERIAL

% CORE BODY OR
RECOVERY SAMPLE
ERY NO

REMARKS

Notes, and details of
weathering etc. (if applicable)

blow/Ft

SM-silty fine and med. sand
gray

9

22

29

36

45

48

62

74

82

84

MC

11.8%

Bottom of Hole 45.0'

DRILLING LOG

1. PROJECT	2. SITE
3. LOCATION	4. DATE
5. NAME OF DRILLER	6. TIME
7. DIRECTION OF DRILL	8. DEPTH
9. TOTAL DEPTH	10. REMARKS

ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
78.0	CLAY	
79.0	CLAY	
80.0	CLAY	
81.0	CLAY	
82.0	CLAY	
83.0	CLAY	
84.0	CLAY	
85.0	CLAY	
86.0	CLAY	
87.0	CLAY	
88.0	CLAY	
89.0	CLAY	
90.0	CLAY	
91.0	CLAY	
92.0	CLAY	
93.0	CLAY	
94.0	CLAY	
95.0	CLAY	
96.0	CLAY	
97.0	CLAY	
98.0	CLAY	
99.0	CLAY	
100.0	CLAY	
101.0	CLAY	
102.0	CLAY	
103.0	CLAY	
104.0	CLAY	
105.0	CLAY	
106.0	CLAY	
107.0	CLAY	
108.0	CLAY	
109.0	CLAY	
110.0	CLAY	
111.0	CLAY	
112.0	CLAY	
113.0	CLAY	
114.0	CLAY	
115.0	CLAY	
116.0	CLAY	
117.0	CLAY	
118.0	CLAY	
119.0	CLAY	
120.0	CLAY	
121.0	CLAY	
122.0	CLAY	
123.0	CLAY	
124.0	CLAY	
125.0	CLAY	
126.0	CLAY	
127.0	CLAY	
128.0	CLAY	
129.0	CLAY	
130.0	CLAY	
131.0	CLAY	
132.0	CLAY	
133.0	CLAY	
134.0	CLAY	
135.0	CLAY	
136.0	CLAY	
137.0	CLAY	
138.0	CLAY	
139.0	CLAY	
140.0	CLAY	
141.0	CLAY	
142.0	CLAY	
143.0	CLAY	
144.0	CLAY	
145.0	CLAY	
146.0	CLAY	
147.0	CLAY	
148.0	CLAY	
149.0	CLAY	
150.0	CLAY	
151.0	CLAY	
152.0	CLAY	
153.0	CLAY	
154.0	CLAY	
155.0	CLAY	
156.0	CLAY	
157.0	CLAY	
158.0	CLAY	
159.0	CLAY	
160.0	CLAY	
161.0	CLAY	
162.0	CLAY	
163.0	CLAY	
164.0	CLAY	
165.0	CLAY	
166.0	CLAY	
167.0	CLAY	
168.0	CLAY	
169.0	CLAY	
170.0	CLAY	
171.0	CLAY	
172.0	CLAY	
173.0	CLAY	
174.0	CLAY	
175.0	CLAY	
176.0	CLAY	
177.0	CLAY	
178.0	CLAY	
179.0	CLAY	
180.0	CLAY	
181.0	CLAY	
182.0	CLAY	
183.0	CLAY	
184.0	CLAY	
185.0	CLAY	
186.0	CLAY	
187.0	CLAY	
188.0	CLAY	
189.0	CLAY	
190.0	CLAY	
191.0	CLAY	
192.0	CLAY	
193.0	CLAY	
194.0	CLAY	
195.0	CLAY	
196.0	CLAY	
197.0	CLAY	
198.0	CLAY	
199.0	CLAY	
200.0	CLAY	

DRILLING LOG (Cont. Sheet)

78.5

Hole No. 11-20

Charleston District

Gray-silty fine and med. sand
gray

7

28

43

46

57

45

45

39

46

52

with gravel

MC

15.4

Bottom of hole 45.0'

AD-R149 732

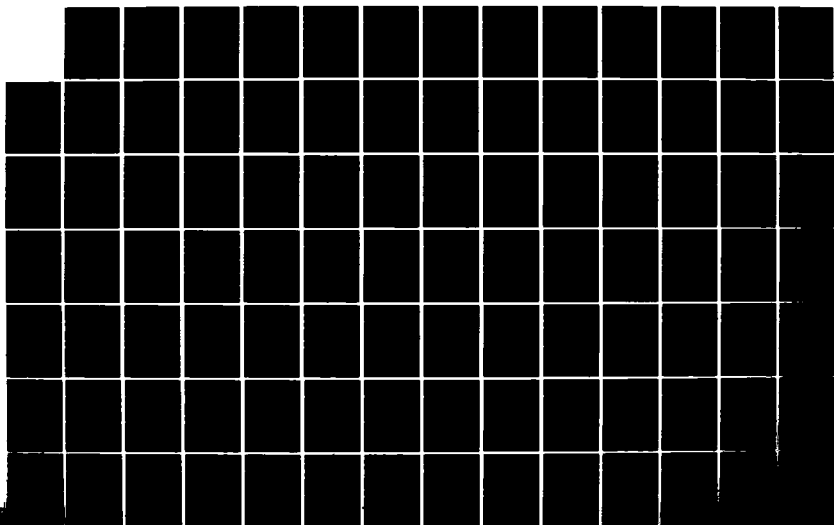
COOPER RIVER REDIVERSION PROJECT LAKE MOULTRIE AND
SANTEE RIVER SOUTH CAR. (U) CORPS OF ENGINEERS
CHARLESTON SC CHARLESTON DISTRICT JUN 76

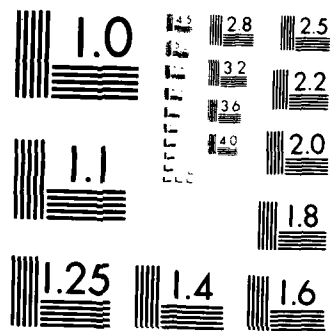
2/5

UNCLASSIFIED

F/G 8/13

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Hole No. 1472

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Charleston District		SHEET OF 2 SHEETS	
1 PROJECT Cooper River Rediversion			10. SIZE AND TYPE OF BIT 3/8" 4 SSS 4 4578 DSS			
2 LOCATION (Coordinates or Station) N574,840 E2,308,920			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3 DRILLING AGENCY Mobile District			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4 HOLE NO. (As shown on drawing title and file number) IT-24			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 0 UNDISTURBED: 0			
5 NAME OF DRILLER Parden			14. TOTAL NUMBER CORE BOXES 0			
6 DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER 76.0'			
7 THICKNESS OF OVERBURDEN 36.0'			16. DATE HOLE STARTED: 22 Apr 75 COMPLETED: 23 Apr 75			
8 DEPTH DRILLED INTO ROCK 0			17. ELEVATION TOP OF HOLE 79.0			
9 TOTAL DEPTH OF HOLE 36.0'			18. TOTAL CORE RECOVERY FOR BORING 19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
79.0	0.0		Top of Hole			
74.0	5.0		SC-Clayey fine sand with strong binder - gray, tan & red	MC 18.0%	1	
69.0	10.0				2	
64.0	15.0				3	
59.0	20.0		SM-Silty fine sand - gray & tan	MC 27.7%	4	
54.0	25.0				5	
49.0	30.0					
Continue on Sheet 2						

95

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

79.0

Hole No.

IT-24

PROJECT

Cooper River Rediversion

INSTALLATION

Charleston District

SHEET 2

OF 2 SHEETS

ELEVATION DEPTH LEGEND

CLASSIFICATION OF MATERIALS
(Description)

% CORE RECOVERY
BOX OR SAMPLE NO

REMARKS
(Drilling time, water loss, depth of weathering, etc. if significant)

a b c d e f

SM-Silty fine and med. sand
tan

5

6

14

13

42

48

Bottom of Hole 36.0'

Hole No. 1t-25






DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		Charleston District		OF 2 SHEETS	
1 PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 3/8" A SSS & 4x5" Bbl			
2 LOCATION (Coordinates or Station) N573,970 E1,307,760				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3 DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4 HOLE NO. (As shown on drawing title and file number) 1T-25				13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN DISTURBED 6 UNDISTURBED -			
5 NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 0			
6 DIRECTION OF HOLE * VERTICAL * INCLINED DEG. FROM VERT.				15. ELEVATION GROUND WATER 67.4			
7 THICKNESS OF OVERBURDEN 40.5'				16. DATE HOLE STARTED 21 Apr 75 COMPLETED 21 Apr 75			
8 DEPTH DRILLED INTO ROCK 0				17. ELEVATION TOP OF HOLE 75.0			
9 TOTAL DEPTH OF HOLE 40.5'				18. TOTAL CORE RECOVERY FOR BORING			
				19. SIGNATURE OF INSPECTOR C. Davis			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
74.9	0.0		Top of Hole			Blow- Ft
69.9	5.0		SC-Clayey fine sand gray & tan	MC 10.5%	1	
66.9	8.0		SM-Silty fine sand gray & tan		2	
64.9	10.0				3	
59.9	15.0				4	
54.9	20.0			MC 21.3%	5	
49.9	25.0					
44.9	30.0					

Continue on Sheet 2

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET 2		
Cooper River Rediversion		Charleston District		OF 2 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. of rock, sand)
						R. Blow/Ft.
			SM-Silty fine sand Tan & Gray			48
						50
					5	57
34.4	35.0					52
						42
30.4	38.0					32
			MH-Silty clay with thin sand lenses dark gray	MC 32.2%	6	32
34.4	40.5					
Bottom of Hole 40.5'						

Hole No. IT-26

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET 1 OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" SSS & 4x5 1/2 BBL			
2. LOCATION (Coordinates or Station) N572,740 E2,306,670				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-26				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 11	
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES		0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		89.1	
7. THICKNESS OF OVERBURDEN 45.2				16. DATE HOLE		STARTED 7 Apr 75	
8. DEPTH DRILLED INTO ROCK 0				17. ELEVATION TOP OF HOLE		79.1	
9. TOTAL DEPTH OF HOLE 45.2				18. TOTAL CORE RECOVERY FOR BORING C. Davis			
19. SIGNATURE OF INSPECTOR							
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
79.1	0.0		Top of Hole			Blows Ft	
			SC-Clayey fine sand tan & red	MC 19.5%	1	4	
						14	
74.1	5.0					35	
						47	
						13	
			Tan & Gray	MC 19.5%	2	18	
						22	
69.1	10.0					15	
						5	
						12	
			SM-Silty fine sand Pink & Gray	MC 28.0%	4	2	
						7	
						12	
59.1	20.0					19	
						6	
			with thin clay lenses pink, gray & tan	MC 15.6%	6	16	
						15	
						16	
						8	
54.1	25.0					12	
							
49.1	30.0						
Continue on sheet 2				99			

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		79.1		Hole No. IT-26	
PROJECT		INSTALLATION		SHEET 2		OF 2 SHEETS	
Cooper River Rediversion		Charleston District					
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
a	b	c	d	e	f	g Blow/Ft	
			SM-gray & yellow		7		20
							23
44.1	35.0		ML-clayey silt - tan	MC 40.0%	8		6
			SM-silty fine & med. sand with clay layers - yellow	MC 22.3%	9		34
			Green & tan		10		18
39.1	40.0		39.0'-45.0 4" Fishtail No Sample				19
					11		
33.9	45.2		45.0-45.2 Limestone - gray Bottom of Hole 45.2'				

100

Hole No. IT-27

DRILLING LOG		DIVISION	INSTALLATION	SHEET
		South Atlantic	Charleston District	OF SHEETS
1. PROJECT Cooper River Rediversion		10. SIZE AND TYPE OF BIT 1 3/8" A.S.S. & 4-5" D.B.H.		
2. LOCATION (Coordinates or Station) N572.380 E2.306.940		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL		
3. DRILLING AGENCY Mobile District		12. MANUFACTURER'S DESIGNATION OF DRILL Falling 314		
4. HOLE NO. (As shown on drawing title and file number) IT-27		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 18		
5. NAME OF DRILLER Parden		14. TOTAL NUMBER CORE BOXES 15		
6. DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER 67.7'		
7. THICKNESS OF OVERBURDEN 54.0'		16. DATE HOLE STARTED COMPLETED 8 Apr 75 9 Apr 75		
8. DEPTH DRILLED INTO ROCK 104.0'		17. ELEVATION TOP OF HOLE 76.7'		
9. TOTAL DEPTH OF HOLE 158.0'		18. TOTAL CORE RECOVERY FOR BORING 89.7'		
		19. SIGNATURE OF INSPECTOR C. Davis		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
76.7	0.0		Top of Hole			
			SC-Clayey Fine Sand W/Strong Binder - Tan & Gray		1	
			Tan, Gray & Red		2	
					3	
66.7	10.0		Tan & Gray		4	
64.2	12.5				5	
61.7	15.0		MH-Soft Silty Clay - Tan & Dark Gray		6	
			Dark Gray		7	
56.7	20.0		SC-Clay Fine and Med. Sand Tan		8	No Recovery for Bag Sample
					9	
51.7	25.0		SM-Silty Fine Sand - Tan & Gray		10	No Recovery for Bag Sample
			W/Gravel			
46.7	30.0					

Continue on Sheet 2

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. IT-27		
PROJECT		INSTALLATION		SHEET 2		
Cooper River Rediversion		Charleston District		OF 5 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) Blow/Ft
			SM-Silty Fine and Med. Sand W/Gravel - Tan & Gray			No Recovery for Bag Sample 32
					11	32
41.7	35.0				12	54
						65
					13	54
						55
36.7	40.0		SC-Clayey Fine Sand W/Gravel Green & Brown		14	57
						64
34.2	42.5		SM-Silty Fine Sand - Gray			63
					15	67
31.7	45.0		W/Shell Fragments - Gray			74
					16	83
						45
26.7	50.0		SC-Clayey Fine Sand W/Traces of Shell - Gray		17	46
						72
24.2	52.5		SM-Clayey Fine Sand W/Traces of Shell-Gray		18	79
21.7	55.0		Sandstone, Gray, hard, dense, calcareous, Sand, Lt. Gray, interbedded with clay, dk. gray, laminae range in thickness of 0.2 Sandstone, argillaceous, fossilif- erous, reworked		Core Box 1	Pull-1 54.0-57.0 Run 3.0 Rec 2.2 C/L 0.9
			Sandstone, dk. gray, argillaceous, contains some shell frags. also some zones of well cemented calcareous sandstone.			Pull-2 57.0-60.5 Run 3.5 Rec 3.5 C/L 0.0
16.7	60.0		Sand, lt. gray, slightly con- solidated, interbedded with clay, dk. gray. Laminae are not continuous, but mingled material contains some shell frags.		Core Box 2	Pull-3 60.5-65.4 Run 4.9 Rec 3.7 C/L 1.2
			Sandstone, lt. gray, argilla- ceous, with discontinuous con- solidated clay laminae. 61.3			Pull-4 65.4-68.1 Run 2.7 Rec 4.2 C/G 1.5
11.7	65.0		to 01.9 zone of slight displace- ment, dipping 45° well headed this is probably due to consoli- dation.		Core Box 3	
			Claystone, lt gray, chalkey, dense, Massive, Hard			
6.7	70.0		Sandstone, Lt. Gray, Dense,			
Continued on Sheet 3						
102						

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE	Hole No.		
PROJECT			76.7	1-42		
INSTALLATION				SHEET 3		
Cooper River Rediversion			Charleston District			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS Logging time, water level, depth, weathering, etc. if significant
3.9	72.8		Well cemented, interbedded with shale soft to firm, fissil. Some of the shale contains pebbles of sandstone. Sandstone and shale laminae are colorbed.	Core	Pull-5	
				Box	68.1-72.8	Sec 4.7
					Run 4.7	C/L 0.0
1.7	75.0		Claystone, Lt. Gray, Chalkey, Dense.		Pull-6	
					72.1-82.1	
			Sandstone, Lt. Gray, argillaceous, calcareous, hard well cemented, interbedded with shale laminae	Core	Run 9.2	
				Box	Rec 8.7	
					C/L 0.0	
-3.3	80.0		Limestone, Lt. Gray, slightly fossiliferous, w/ large shell frags.			
-5.3	82.0		Sand, Lt. Gray, slightly micaceous, cemented, interbedded with clay, consolidated.			
-3.3	85.0		Siltstone, Lt. Gray, hard, with sand		Pull-7	
			Shale, Dk. Gray, fissil, with mica, sand		82.0-90.5	
					Run 8.5	
			Sandstone, Argillaceous	Core	Rec 8.5	
			Shale, Dk. Gray, w/Mica, sand	Box	C/L 0.0	
			Sandstone, well cemented, shell frags, argillaceous, friable		6	
-13.3	90.0		Limestone, Gray, fossiliferous, w/shells, well cemented			
			Sandstone, Lt. Gray, calcareous, cemented, med. to coarse grain, with shale layers.		Pull-8	
					90.5-100.5	
			Sand, Lt. Gray, slightly cemented in zones, interbedded with shale and clay with some lignite laminae	Core	Run 10.0	
-18.3	95.0			Box	Rec 7.7	
					C/L 2.3	
			Shale, Dk. Gray, with sand laminae		7	
			Sand, Lt. Gray, slightly cemented with shale laminae, Dk. Gray			
-23.3	100.0					
					Pull-9	
					100.5-108.5	
					Run 8.0	
-28.3	105.0			Core	Rec 5.3	
				Box	C/L 2.7	
					8	
			Shale, Lt. Gray, Dense, hard massive			
			Sandstone, Lt. Gray, argillaceous, calcareous, contains some fossils.			
-33.3	110.0					
Continue on Sheet 4						
103						

Continue on Sheet 4

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		76.7		Hole No.		IT-27	
PROJECT		INSTALLATION		SHEET		OF 5 SHEETS		4	
Cooper River Reliversion		Charleston District							
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering etc. if significant)			
			Sandstone (Continued)						
			Limestone, sandy, dense		Core	Pull-10			
			Sandstone, Dk. Gray, argill- aceous, calcareous, contains		Box	108.5-113.5			
			shell frags.		9	Run 5.0			
-38.3	115.2		Sandstone, Lt. Gray, well to poorly cemented, contains a few shell frags.			Rec 6.2	C/G 1.2		
						Pull-11			
						113.5-123.5			
						Run 10.0			
						Rec 5.3			
						C/L 4.7			
-43.2	120.0				Core				
					Box				
					10				
-48.3	125.0								
-53.3	130.0				Core	Pull-12			
					Box	123.5-133.5			
					11	Run 10.0			
						Rec 9.2			
						C/L 0.8			
-58.3	135.0								
-63.3	140.0		Limestone, Sandy, Lt. Gray		Core	Pull-13			
			Sandstone, Lt. Gray, well to poorly cemented.		Box	133.5-143.0			
					12	Run 9.5			
						Rec 9.5			
						C/L 0.0			
-68.3	145.0		Sandstone, Greenish Gray, Glaucousitic, hard, well cemented.			Pull-14			
						143.0-148.0			
						Run 5.0			
						Rec 5.6			
						C/G 0.6			
-73.3	150.0		Limestone, Lt. Gray, Hard, Well Cemented, Fossiliferous, Sand, Glaucousitic.						

Continue on Sheet 5

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Continue on Sheet 5









107

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.	
PROJECT		INSTALLATION		SHEET	
Copper River Rediversion		Charleston District		105	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	RECOVERED CORE BOX OR SAMPLE NO	REMARKS (Drilling time, water, depth, weathering, etc.)
			Sand, lt. Gray, fine to silty (SS), contains some clay laminae, slightly cemented	Core Box 14 & 15	Pen 11-15 148.0-158.0 Pen 10.0 Res 9.1 C.L. 0.7
-78.3	155.0		Sandstone, argillaceous, mica- ceous, clacareous, cemented with zones of well cemented sandstone.		
-81.3	158.0				
Bottom of Hole 158.0'					

[illegible]

Hole No. IT-28

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		Charleston District		OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ϕ SSS & 4x5 1/2" BBL			
2. LOCATION (Coordinates or Station) N572.370 E2.307.370				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-28				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 8 UNDISTURBED -	
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER			
7. THICKNESS OF OVERBURDEN 36.0				16. DATE HOLE STARTED 3 Apr 75 COMPLETED 3 Apr 75			
8. DEPTH DRILLED INTO ROCK 0				17. ELEVATION TOP OF HOLE 76.8			
9. TOTAL DEPTH OF HOLE 36.0				18. TOTAL CORE RECOVERY FOR BORING			
				19. SIGNATURE OF INSPECTOR C. Davis			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
76.8	0.0		Top of Hole			Blows ft
71.8	5.0		SC-Clayey Fine Sand w/Strong Binder-Gray, Tan & Red		1	1
			Gray		2	2
66.8	10.0		Soft Clayey Fine Sand	MC 31.1%	3	3
64.3	12.5					
61.8	15.0		MH-Soft Silty Clay - Gray	MC 48.8%	4	4
56.8	20.0		SM-Silty Fine Sand	MC 20.0%	5	5
51.8	25.0		Yellow W/Traces of Gravel		6	6
46.8	30.0		No Gravel			13

Continue on Sheet 2

107

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
COOPER RIVER REDIVERSION		CHARLESTON DISTRICT		OF 2 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g Blow/Ft
			SM-Silty Fine and Med. Sand Yellow	MC 16.3%	7	16 9
41.8	35.0			MC	7	7
40.0	36.0		W/Clay Balls-Green & Brown Bottom of Hole 36.0'	16.7%	8	7

Hole No. T - 9

DRILLING LOG		DIVISION	INSTALLATION		SHEET	
		South Atlantic	Charleston District		OF SHEETS	
1. PROJECT			10. SIZE AND TYPE OF BIT			
Cooper River Rediversion			3/8" ID Splitspoon & 4x5" Core Bbl			
2. LOCATION (Coordinates or Station)			11. DATUM FOR ELEVATION SHOWN (TBM or MSL)			
N 583,000 E 2,328,200			MSL			
3. DRILLING AGENCY			12. MANUFACTURER'S DESIGNATION OF DRILL			
Mobile District			Falling 314			
4. HOLE NO. (As shown on drawing title and file number)			13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		DISTURBED	UNDISTURBED
T-9			6		6	-
5. NAME OF DRILLER			14. TOTAL NUMBER CORE BOXES		0	
Falling			15. ELEVATION GROUND WATER		20.7	
6. DIRECTION OF HOLE			16. DATE HOLE		STARTED	COMPLETED
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			5 May '55		5 May '55	
7. THICKNESS OF OVERBURDEN			17. ELEVATION TOP OF HOLE			
45.0'			25.2			
8. DEPTH DRILLED INTO ROCK			18. TOTAL CORE RECOVERY FOR BORING			
0			-			
9. TOTAL DEPTH OF HOLE			19. SIGNATURE OF INSPECTOR			
45.0'			C. Davis			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
25.2	0.0		Top of Hole			Blow Ft
20.2	5.0		CL-Silty Clay Tan & Gray	MC 28	1	Water Table @ 4.5' 5 May '55
			SM-Silty Fine & Med Sand Gray & Tan		2	
15.2	10.0		SP-Fine & Med Sand Gray		3	
10.2	15.0		Gray & Tan		4	
5.2	20.0		SM-Silty Fine Sand Gray		5	
0.2	25.0		Gray & Tan		6	
-4.8	30.0		Gray & Tan			
			Continue on Sheet 2			

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT	INSTALLATION	SHEET		OF 2 SHEETS		
Per Silver Rediversion	Charleston District					
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
						198
						196
						20
						78
						19
						7
						10
						67
						15
						60

110

Hole No. T-9A

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET 1 OF 3 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon & 4x5"			
2. LOCATION (Coordinates or Station) N 581,500 E2, 326,580				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core Bb1			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL MSL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) T-9A				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 9	UNDISTURBED -
5. NAME OF DRILLER Rountree P.				14. TOTAL NUMBER CORE BOXES 1		15. ELEVATION GROUND WATER 45.2'	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				16. DATE HOLE 12 Jun 75		STARTED 16 Jun 75	
7. THICKNESS OF OVERBURDEN 78.1'				17. ELEVATION TOP OF HOLE 55.7'		18. TOTAL CORE RECOVERY FOR BORING 61.2 %	
8. DEPTH DRILLED INTO ROCK 0				19. SIGNATURE OF INSPECTOR R. Lawson			
9. TOTAL DEPTH OF HOLE 78.1'							
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
55.7	0.0		Top of Hole				
			SM-Dark Brown		1		6
							12
50.7	5.0		SM-SC-More Coarse-Stiffer Brown		2		58
							61
			Red Brown				41
							42
45.7	10.0		SC-Clay Binded (Coarse) Red-Brown - Small Amounts of Organic Silts & Mica in Layers @ 1/8" Thick		3	Water Table @ 10.5' 12 Jun 75	24
							19
							5
40.7	15.0		SM-Contains a Shell Fragment Brown & Lt. Gray	MC 32	4		5
			Lt. Gray, W/Approt. 1/2" Thick Layers of Clay Throughout				16
							33
35.7	20.0						43
							42
			Gray Clay Lenses & Rock Fragment		5	0.2/50 Blows-Dense SM	53
							103
30.7	25.0						39
							69
			Shale and Clay Lenses Interbedded @ 1/2" Thick Gray		6		74
25.7	30.0						70
Continue on Sheet 2							

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		55.7		Hole No. T-9A	
PROJECT		INSTALLATION		SHEET		2	
Cooper River Rediversion		Charleston District		OF 3		SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)	
a	b	c	d	e	f	g	
					6	0.4/100 Blows 153	
			Gray Sand and Shale Layers			83	
			Shale Layers @ 1/8" Thick -			68	
20.7	35.0		Several Layers			157	
					7	66	
						77	
15.7	40.0					45	
			Gray		8	0.3/Blows-Dense SM 153	
						Dk. Gray Clay Layers	
						(Approx. 1/2) + Shale 105	
10.7	45.0					Clay Pockets. 90	
			Shale, gray, alternating			Pull - 1	
			layers of sandstone included.			44.6' - 49.6	
			Sandstone of light color, soft			Run 5.0	
			to moderately hard, with			Rec 4.6	
			depth becomes 1/8 inch lamina.			C/L 0.4	
5.7	50.0		Shale is black and fissile			Pull - 2	
						49.6 - 53.1	
						Run 3.5	
						Rec 3.2 C/L 0.3	
0.7	55.0				Core Box 1	Pull - 3	
						53.1 - 58.1	
						Run 5.0	
						Rec 2.0	
						C/L 3.0	
4.3	60.0					Pull - 4	
						58.1 - 63.1	
						Run 5.0	
						Rec 0.0	
						C/L 5.0'	
-0.3	65.0		Gray to Dark, Gray SM, Colors			Pull - 5	
			Mixed Not Layered			63.1 - 68.1	
			SM-SF gray, poorly sorted			Run 5.0	
			with clay lamina			Rec 3.6	
						C/L 1.4	
14.3	70.0						
Continue on Sheet 3							
112							

Continue on Sheet 3

112

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

55.7

Hole No. T-9A

PROJECT

Cooper River Rediversion

INSTALLATION

Charleston District

SHEET

3

OF 3 SHEETS

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS

(Description)

% CORE
RECOV
ERY

BOX OR
SAMPLE
NO

REMARKS

(Drilling time, water loss, depth,
weathering, etc. if significant)

a

b

c

d

e

f

-14.3

70.0

-19.3

75.0

-22.4

78.1

Pull #5 Con't

Pull - 6

68.1 - 73.1

Run 5.0

Rec 3.6

C/L 1.4

Pull - 7

73.1 - 78.1

Run 5.0

Rec 3.5

C/L 1.5'

Bottom of Hole

78.1'

113

Hole No. T - 11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET 1 OF 1 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 5/8" A SSS & 4x5 1/2 BBL			
2. LOCATION (As shown on drawing title and site number) N 58.5° E 10 E 2,329,890				11. DAYUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 714			
4. HOLE NO. (As shown on drawing title and site number) F-11				13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN		14. DISTURBED 3	
5. NAME OF BORER Gordon				14. TOTAL NUMBER CORE BOXES 3		15. ELEVATION GROUND WATER 11.0'	
6. DATE OF HOLE May 75				16. DATE HOLE May 75		17. ELEVATION TOP OF HOLE 20.0	
7. ELEVATION OF OVERBURDEN 10.5				18. TOTAL CORE RECOVERY FOR BORING 98.4		19. SIGNATURE OF INSPECTOR C. Davis	
8. TOTAL DEPTH OF HOLE 23.2							
ELEVATION	DEPTH	END	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
			Top of Hole				
10.5	10.0		CL - Fine Sandy Clay Tan & Gray	MC 22.4%	1	Spl 2 1.0'-6.0'	Class. CL CL
							9
							15
							16
15.0	13.0			MC 16.4	2		17
							17
							16
			SM-Silty Fine and Med. Sand Green & Tan Top of Rock		3	refusal at 10.5' 10.0-20	
			Shale - Hard Gray	89	Core Box 1	Pull - 1 10.5'-15.0' Run 4.5 Rec 3.7 C/L 0.8	
				100	Core Box 2	Pull - 2 15.0 - 19.1 Run 4.1 Rec 4.1 C/L 0.0	
			Shale, Gray hard with some soft layers and sand				
				115	Core Box 3	Pull - 3 19.1 - 23.2 Run 4.1 Rec 4.7 C/G 0.6	
			Bottom of Hole 23.2'				

114

Hole No. T - 12

DRILLING LOG		DIVISION	INSTALLATION		SHEET	
		South Atlantic	Charleston District		OF 1 SHEETS	
1. PROJECT Cooper River Refinery			10. SIZE AND TYPE OF BIT 3/8" 6 sgs 1 1/2"			
2. LOCATION (Coordinates or Station) N 881,140 E 2,329,760			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District			12. MANUFACTURER'S DESIGNATION OF DRILL Halling 314			
4. HOLE NO. (As shown on drawing title and file number) T-12			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 3	UNDISTURBED -
5. NAME OF DRILLER Parson			14. TOTAL NUMBER CORE BOXES 7			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER 17.1			
7. THICKNESS OF OVERBURDEN 4.7			16. DATE HOLE STARTED 6 May 75 COMPLETED 7 May 75			
8. DEPTH DRILLED INTO ROCK 11.1			17. ELEVATION TOP OF HOLE 25.1			
9. TOTAL DEPTH OF HOLE 25.1			18. TOTAL CORE RECOVERY FOR BORING 98.5%			
			19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
25.1	0.0		Top of Hole			
20.1	5.0		Clayey Fine Sand Gray & Tan	MC 16.1	1	
15.1	10.0				2	Water Table: 2.5-6 May 75
11.6	13.5				3	
10.1	15.0		Limestone, gray, calcareous, hard, massive.		4	Scale Change @ 100/0.1 15.0'
+7.0	17.1		Limestone, gray, hard, cal- careous		5	Box 1 Pull-1 17.5-17.2' Rtn 3.7' Rtn 3.4' C/L 6.3'
6.1	19.0		Limestone, gray hard, vuggy		6	Box 2 Pull-2 17.2-17.4' Rtn 3.2' Rtn 3.2' C/L 6.2'
4.1	21.0		Sandstone, gray, soft, friable, calcareous contains lignite beams.		7	









115

[illegible]

116

Hole No. T-13

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		Charleston District		OF SHEETS	
1. PROJECT				10. SIZE AND TYPE OF BIT			
Copper River Railroad				3 1/2" A			
2. LOCATION (Coordinates or Station)				11. DATUM FOR ELEVATION SHOWN (TBM or MSL)			
N 580,960 E 2,330,500				TBM			
3. DRILLING AGENCY				12. MANUFACTURER'S DESIGNATION OF DRILL			
Mobile District				Fairlie #1			
4. HOLE NO. (As shown on drawing title and file number)				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN			
T-13				DISTURBED UNDISTURBED			
5. NAME OF DRILLER				14. TOTAL NUMBER CORE BOXES			
Harden				-			
6. DIRECTION OF HOLE				15. ELEVATION GROUND WATER			
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEG. FROM VERT.				9			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE			
36.0'				STARTED COMPLETED			
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE			
0.0'				21.0			
9. TOTAL DEPTH OF HOLE				18. TOTAL CORE RECOVERY FOR BORING			
36.0'				-			
				19. SIGNATURE OF INSPECTOR			
				Davis			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
21.0	0.0		Top of Hole			
			CL-Silty Clay - Tan & Gray		1	
11.4	9.5		OH-Fat Clay-Gray	MC 20.0	2	
9.4	12.5					Water Table at 12.0' 23 Sept 57
6.9	14.0		SP-SM - Fine & Med Sand with traces of Organic matter - Gray	MC 39.3	3	
			Fine & Medium Sand		4	
2.4	18.5					
			SM - Silty Fine Sand	MC 23.4		
						
-9.1	30.0					

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DRILLING LOG (Cont Sheet)

ELEVATION TO POINT

21.0

Hole No.

Rediversion

1 SHEET

SHEETS

REMARKS

Drilling time, water level, depth of
penetration, etc., at each interval

R

118

DRILLING LOG			DIVISION	INSTALLATION	Hole No.		SHEET
1. PROJECT			South Atlantic	Charleston			OF SHEETS
2. LOCATION (Coordinates or Station)			10. SIZE AND TYPE OF BIT				
3. DRILLING AGENCY			11. DATUM FOR ELEVATION SHOWN (TBM or MSL)				
4. HOLE NO. (As shown on drawing title and file number)			12. MANUFACTURER'S DESIGNATION OF DRILL				
5. NAME OF DRILLER			13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN				
6. DIRECTION OF HOLE			14. TOTAL NUMBER CORE BOXES				
7. THICKNESS OF OVERBURDEN			15. ELEVATION GROUND WATER				
8. DEPTH DRILLED INTO ROCK			16. DATE HOLE				
9. TOTAL DEPTH OF HOLE			17. ELEVATION TOP OF HOLE				
			18. TOTAL CORE RECOVERY FOR BORING				
			19. SIGNATURE OF INSPECTOR				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
			Top of Hole				
			MC - Clay - Tan & Gray	MC 33.2		LAB CLASSIFICATION Spl. Class. 1.0' - 6.0' CH	
			MC - Clay				
			CH - Fat Clay - Tan & Gray	MC 15.3			
			FSM - Fine and Med Sand				
			Top of Rock 16.4				
0.9	20.0		Siltstone-gray, soft, with some fine sand seams, thin sandy and calcareous with depth				
			Shale Interbedded with fine grain sand, gray, fine, soft.		Core Box 1		
			Sandstone, gray, fine, with fine grain with occasional layers of shale.				
			Continued on sheet				

DRELLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

Hole No.

INSTALLATION

SHEET

DATE	TIME	DEPTH	CLASSIFICATION OF MATERIALS <i>Description</i>	% CORE RECOV ERY	BOX OR SAMPLE NO	REMARKS <i>Drilling time, water, etc. depth weathering, etc. (if applicable)</i>
			sandstone with layers of shale			

Hole No. T - 15

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1	
1 PROJECT		South Atlantic		Charleston District		OF 2 SHEETS	
2 LOCATION (Coordinates or Station)		N 580,340 E 2,333,000		10. SIZE AND TYPE OF BIT 1 3/8" ϕ sss & 4x5 1/4 BBL		11 DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3 DRILLING AGENCY		Mobile District		12 MANUFACTURER'S DESIGNATION OF DRILL		Failing 314	
4 HOLE NO. (As shown on drawing title and file number)		T-15		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 5 UNDISTURBED -	
5. NAME OF DRILLER		Parden		14. TOTAL NUMBER CORE BOXES		1	
6. DIRECTION OF HOLE		<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER		14.1	
7. THICKNESS OF OVERBURDEN		22.5		16 DATE HOLE		STARTED 18 Sept 75 COMPLETED 18 Sept 75	
8 DEPTH DRILLED INTO ROCK		12.5		17. ELEVATION TOP OF HOLE		22.7	
9. TOTAL DEPTH OF HOLE		35.0		18 TOTAL CORE RECOVERY FOR BORING		28.8	
				19. SIGNATURE OF INSPECTOR		C. Davis	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
22.7	0.0		Top of Hole			Blows Ft	
			SM - Silty Fine Sand Tan			11	
						11	
						13	
						20	
				MC 36	1	Water Table 8.5	
13.1	9.5					20	
			Gray			28	
						12	
10.1	12.5				2	42	
			SP - Medium to Coarse Sand W/Gravel Gray	MC 18.3	3	16	
7.1	15.5					15	
						14	
					4	19	
2.6	20.0					27	
.1	22.5		SM - Silty Fine Sand W/Alternating Clay Layers Gray Top of Rock 22.5		5	31	
			Shale-layered black and gray soft, horizontal layers of fissile, calcareous clay with friable fine grain sandstone			Refusal 9	
-2.1	24.8					Pull - 1 Rec 0.8	
						22.5 - 24.8 C/I 1.5	
						Run 2.3	
						Pull - 2	
						24.8 - 29.8	
						Run 5.0	
						Rec 1.8	
-7.3	30.0		Sandstone-dark gray, calcareous, soft, to moderately hard. Contains zones of limestone.		Core Box 1	C/I 3.2	
Continue on Sheet 2							

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

22.7

Hole No. T-15

INSTALLATION

SHEET 2

OF 2 SHEETS

Cooper River Rediversion

Charleston District

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS Drilling time, water loss, depth of weathering, etc. if significant
22.3	35.0		Shale-dark gray, to black laminated with fine grain sands, soft.		Core Box 1	Pull - 3 29.8 - 35.0 Run 5.2 Rec 1.0 C/L 4.2

Bottom of Hole 35.0'

Hole No. T-16

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS		
1. PROJECT Cooper River Rediversion		South Atlantic	Charleston District	10. SIZE AND TYPE OF BIT 1 3/8" Ø sss & 4x5 1/2 RBL		
2. LOCATION (Coordinates or Station) N579,960 E2,332,690				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL		
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314		
4. HOLE NO. (As shown on drawing title and file number) T-16				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 4, UNDISTURBED: -		
5. NAME OF DRILLER Pardon				14. TOTAL NUMBER CORE BOXES 2		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 15.2		
7. THICKNESS OF OVERBURDEN 11.8				16. DATE HOLE 15 Sept 75		
8. DEPTH DRILLED INTO ROCK 23.2				17. ELEVATION TOP OF HOLE 21.2		
9. TOTAL DEPTH OF HOLE 35.0				18. TOTAL CORE RECOVERY FOR BORING 43.1		
				19. SIGNATURE OF INSPECTOR C. Davis		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
21.2	0.0		Top of Hole			Blows Ft
			C1 - Silty Clay - Tan		1	LAB CLASSIFICATION Spl. Class. 3 SC
16.2	5.0		SC - Clayey Fine sand Tan	MC 19.7	2	Water Table @ 6.0' 15 Sept 75
13.7	7.5		SP-SM-Fine and Med. Sand Gray		3	
11.2	10.0				4	Refusal @
9.4	11.8		Top of Rock 11.8'			
6.2	15.0		Limestone, gray, hard, dense shell and sand matrix.			Pull - 1 11.8 - 15.3' Run 3.5' Rec 2.6' C/L 0.9'
			Shale-gray, banded with fine grain sand, fissile-soft.			Pull - 2 15.3 - 20.3' Run 5.0' Rec 3.0' C/L 2.0'
1.2	20.0				1	Pull - 3 20.3 - 25.3' Run 5.0' Rec 1.1' C/L 3.9'
-3.8	25.0					Pull - 4 25.3 - 28.4 Rec 3.7 Run 3.1 CG 0.6
			25.3 to 26.0 Limestone, hard			Pull - 5 28.4 - 29.8 Rec 1.4 Rec 0.8 C/L 0.6
-8.8	30.0		Shale, layered with sand			
			Continue on Sheet 2			

123

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

21.2

Hole No. T - 16

PROJECT

INSTALLATION

SHEET

Cooper River Rediversion

Charleston District

OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
	b	c	d	e	f	g
			Shale, Continued		Core Box 2	Pull - 6 29.8 - 35.0' Run 5.2' Rec 2.5' C/L 2.7'

-13.8 35.0

Bottom of Hole 35.0'

Hole No. 1-17

DRILLING LOG		DIVISION	INSTALLATION		SHEET 1 OF 2 SHEETS	
1 PROJECT		South Atlantic	Charleston Dist.		10 SIZE AND TYPE OF BIT 3/8" Ø SSS & 4x5" BBL	
2 LOCATION (Coordinates or Station)		N578.740 E2.336.040	MSL		11 DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3 DRILLING AGENCY		Mobile District	12 MANUFACTURER'S DESIGNATION OF DRILL		Failing 314	
4 HOLE NO. (As shown on drawing title and file number)		T-17	13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6 UNDISTURBED	
5 NAME OF DRILLER		Parden	14 TOTAL NUMBER CORE BOXES		1	
6 DIRECTION OF HOLE		VERTICAL	15 ELEVATION GROUND WATER		8.4	
7 THICKNESS OF OVERBURDEN		31.5	16 DATE HOLE		STARTED 15 Aug 75 COMPLETED 15 Aug 75	
8 DEPTH DRILLED INTO ROCK		4.0	17 ELEVATION TOP OF HOLE		20.4	
9 TOTAL DEPTH OF HOLE		35.5	18 TOTAL CORE RECOVERY FOR BORING		12.5	
			19 SIGNATURE OF INSPECTOR		C. Davis	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
20.4	0.0		Top of Hole			Blows Ft
			CL - Silty Clay Tan & Gray	MC 41.0%	1	LAB CLASSIFICATION Spl. Class. 0 2 CH 8 0.0'-5.0' CH 11
15.4	5.0		CH - Flat Clay Tan & Gray	MC 33.3	2	11
					3	11
10.4	10.0					15
						14
8.4	12.0					18
						Water Table @ 12.0 15 Aug 75
5.4	15.0		SP-SM-Fine and Med. Sand Gray	MC 13.3	4	16
						34
						42
						41
						39
0.4	20.0				5	40
-0.6	21.0		Top of Rock			Refusal 84
			Sandstone-, gray, hard			Pull 21.0-25.0
-4.6	25.0		Sand-, gray, poorly sorted unconsolidated.		Core Box 1	Run 4.0 Rec 0.5 C/L 3.5
			SP-SM-Fine and Med. Sand Gray		6	120
						141
-9.6	30.0					147
			Continue on Sheet 2			125

Hole No. T-18

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1		
		South Atlantic		Charleston District		OF 2 SHEETS		
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" Ø SSS 4x5" BBL				
2. LOCATION (Coordinates or Station) N 578.460 E 2,335.780				11. DAYUM FOR ELEVATION SHOWN (TBM or MSL) MSL				
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314				
4. HOLE NO. (As shown on drawing title and file number) T-18				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 6 UNDISTURBED -				
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 0				
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 9.7				
7. THICKNESS OF OVERBURDEN 36.0'				16. DATE HOLE STARTED 14 Aug 75 COMPLETED 14 Aug 75				
8. DEPTH DRILLED INTO ROCK 0				17. ELEVATION TOP OF HOLE 21.7				
9. TOTAL DEPTH OF HOLE 36.0'				18. TOTAL CORE RECOVERY FOR BORING -				
				19. SIGNATURE OF INSPECTOR C. Davis				
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g		
21.7	0.0		Top of Hole				Blows Ft	
			CL-Fine Sany Clay Tan & Gray		1		-	
							10	
16.7	5.0						12	
							12	
			CH-Fat Clay w/Vegetable Matter Gray		2		15	
12.7	9.0						15	
11.7	10.0						9	
9.7	12.0				3	Water Table @ 12.0' 14 Aug 75	10	
			SP-SM-Fine and Med. Sand Gray		4		50	
6.7	15.0						50	
							37	
3.7	18.0						26	
1.7	20.0		SM-Calcareous Silty Fine Sand w/Shell Gray	MC 22.7%	5		16	
								27
								55
								56
-3.3	25.0							65
								102
					6		131	
-8.3	30.0						138	
Continue on Sheet 2							127	

21.7'

Hole No. T-18

T-18

SHEET 2

of 2nd SHEETS

Cooper River Rediversion

Charleston District

INSTALLATION

FIGURE 10. 2007-2008. LEGEND

CLASSIFICATION OF MATERIALS

%. CORE
RECOV
ERY

BOX OR
SAMPLE
NO

REMARKS

Drilling time water to depth of weathering etc., if significant.

K

145

163

174

188

6

Bottom of Hole
36.0'

128

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1	
		South Atlantic		Charleston District		OF 2 SHEETS	
1 PROJECT				10 SIZE AND TYPE OF BIT 1 3/8" 6 sss 4 4x5" BBL			
2 LOCATION (Coordinates or Station)				11 DATUM FOR ELEVATION SHOWN (TBM or MSL)			
N 57° 13' 0" E 335.540				MSL			
3 DRILLING AGENCY				12 MANUFACTURER'S DESIGNATION OF DRILL			
Mobile District				Failing 314			
4 HOLE NO. (As shown on drawing title and file number)				13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		14 TOTAL NUMBER CORE BOXES	
T-19				6		2	
5 NAME OF DRILLER				15 ELEVATION GROUND WATER		16 DATE HOLE	
Parden				10.0		STARTED 18 Aug 75 COMPLETED 18 Aug 75	
6 DIRECTION OF HOLE				17 ELEVATION TOP OF HOLE			
VERTICAL INCLINED DEG. FROM VERT.				20.5'			
7 THICKNESS OF OVERBURDEN 27.6				18 TOTAL CORE RECOVERY FOR BORING 74.7 %			
8 DEPTH DRILLED INTO ROCK 7.9				19 SIGNATURE OF INSPECTOR			
9 TOTAL DEPTH OF HOLE 35.5'				Soils: C. Davis; Geology Hancock			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
a	b	c	d	e	f	g	
20.5	0.0		Top of Hole				
			CL - Silty Clay, Tan				
15.5	5.0			MC 26.2%	1		
			SC - Clayey Fine and Med. Sand, Tan	MC 19.3%	2		
10.5	10.0		SP - Fine To Coarse Sand W/Gravel, Gray	MC 12.8%	3	Water Table @ 10.5' 18 Aug 75	
			ML - Clayey Silt, Gray	MC 29.1%	4		
	14.1		Top of Rock		5		
5.5	15.0		Sandstone - Gray, hard, massive, argillaceous, slightly glauconitic, streaks of lignite present		Core Box 1	Pull - 1 14.1 - 17.1 Run 3.0 Rec 2.6 C/L 0.4	
0.5	20.0		Shale-Black to dark gray, soft with thin lamellae of sand		Core Box 2	Pull - 2 17.1 - 22.0 Run 4.9 Rec 3.3 C/L 1.6	
-4.5	25.0		SM - Silty Fine Sand W/Clay Layers, Gray		6		
-9.5	30.0						
Continue on Sheet 2							

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

20.5'

Hole No. 1-19

INSTALLATION

SHEET 2

OF 2 SHEETS

Cropper River Rediversion

Charleston District

ELEVATION DEPTH LEGEND

CLASSIFICATION OF MATERIALS
Description

% CORE BOX OR
RECOV SAMPLE
ERY NO

REMARKS
Drilling time, water level, etc.
Weathering, etc. of materials

11.5	58.5	
15.0	35.5	

Bottom of Hole
35.5'

15.5
15.2
19.0
19.5

Hole No. 1 - 20

DRILLING LOG		DIVISION	INSTALLATION	SHEET	
1 PROJECT		South Atlantic	Charleston District	OF 1 SHEETS	
2 LOCATION (Coordinates or Station)		10 SIZE AND TYPE OF BIT 1 3/8" Ø SS 6 3/4" BBL			
3 DRILLING AGENCY		11 DATUM FOR ELEVATION SHOWN (TBM, MSL)			
4 HOLE NO. As shown on drawing title and file number		MSL			
5 NAME OF DRILLER		12 MANUFACTURER'S DESIGNATION OF DRILL			
6 DIRECTION OF HOLE		13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN			
7 THICKNESS OF OVERBURDEN		14 TOTAL NUMBER CORE BOXES			
8 DEPTH DRILLED INTO ROCK		15 ELEVATION GROUND WATER			
9 TOTAL DEPTH OF HOLE		16 DATE HOLE			
		17 ELEVATION TOP OF HOLE			
		18 TOTAL CORE RECOVERY FOR BORING			
		19 SIGNATURE OF INSPECTOR			
		C. Davis			
ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
20.8	0.0	Top of Hole			Blows Ft
		CL-Silty Clay Tan	MC 30.8%	1	6
19.8	5.1	CH-Flat Clay Tan & Gray		2	6
		SC-Clayey Fine Sand Gray			7
19.8	10.0	Gray & Tan	MC 22.3%	3	11
		SP-SM - Fine and Med. Sand Gray	MC 13.8%		11
5.8	15.0			4	8
					12
0.8	20.0				40
					38
-4.2	25.0			5	17
					50
-9.2	30.0				16
					18
					28
					79
					159
					172
					190
					184

Continue on Sheet 2

131

DRILLING LOG (Cont Sheet)

ELEVATION TO TOP OF HOLE

20.8

Hole No.

T-20

INSTALLATION

Charleston District

SHEET

1 OF 2 SHEETS

DATE OF LOG

CLASSIFICATION OF MATERIALS

Designation

% CORE BOX OR
RECOVER SAMPLE

ERY

NO

1

REMARKS
Drilling time, water, etc. depth of
weathering, etc. if necessary

R

144

159

163

154

Stiff fine sand within Clay
lenses Gray

Bottom of Hole
56.0'

132

DIVISION		INSTALLATION		SHEET	
DRILLING LOG		South Atlantic		Charleston District	
PROJECT		10. SIZE AND TYPE OF BIT		OF 2 SHEETS	
1. PROJECT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)			
2. LOCATION (Coordinates or Station)		12. MANUFACTURER'S DESIGNATION OF DRILL			
3. DRILLING AGENCY		13. TOTAL NO. OF OVER- CUSHIONED BURDEN SAMPLES TAKEN			
4. HOLE NO. (As shown on drawing title and file number)		14. TOTAL NUMBER CORE BOXES			
5. NAME OF DRILLER		15. ELEVATION GROUND WATER			
6. DIRECTION OF HOLE		16. DATE HOLE			
7. THICKNESS OF OVERBORDEN		17. ELEVATION TOP OF HOLE			
8. DEPTH OF HOLE		18. TOTAL CORE RECOVERY FOR BORING			
9. TOTAL DEPTH		19. SIGNATURE OF INSPECTOR			
ELEVATION (Feet) (TBM or MSL)		REMARKS			
11.4		Drilling time, water loss, depth of weathering, etc., if significant			
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					
0.1					
11.4					
8.4					
5.9					
5.1					
2.1					
1.1					

DRILLING LOG (Cont Sheet)

NOTATION: TOP OF HOLE

20.94

Hole No.

1 - 22

NOTATION

SHEET

OF 2 SHEETS

Location and Direction

Charleston District

CLASSIFICATION OF MATERIAL

% CORE BOX OK
RECOVER SAMPLE
ERY NO

REMARKS

Drilling time water level
Weathering at depth

1.00 Silty Fine Sand w/Traces
of Mica

5

104

183

100

Bottom of Hole 54.5

134

Hole No. 1 - 23

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET 1 OF 2 SHEETS	
1 PROJECT Cooper River Rediversion				10 SIZE AND TYPE OF BIT 3/8" 3 SSS 4 1/2" BTL			
2 LOCATION (Coordinates or Station) N576.130 E2,338.280				11 DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3 DRILLING AGENCY Mobile District				12 MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4 HOLE NO. (As shown on drawing title and file number) T-23				13 TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN 4			
5 NAME OF DRILLER Parden				14 TOTAL NUMBER CORE BOXES 2			
6 DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15 ELEVATION GROUND WATER 12.3			
7 THICKNESS OF OVERBURDEN 20.2				16 DATE HOLE STARTED 9 Sept. 75			
8 DEPTH DRILLED INTO ROCK 14.8				17 ELEVATION TOP OF HOLE 21.3			
9 TOTAL DEPTH OF HOLE 35.0				18 TOTAL CORE RECOVERY FOR BORING 89.9			
				19 SIGNATURE OF INSPECTOR Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
21.3	0.0		Top of Hole				
			CL - Silty Clay Tan & Gray	MC 23.8%	1	LAB CLASSIFICATION Spl. Class. 10 4 SM 14 1.0'-5.0' CH 19	
16.3	5.0						
				SC - Clayey Fine Sand Gray	MC 13.3%	2	Water Table ± 9.0' 9 Sept. 75
11.8	9.5						
				SP-SM - Fine & Med. Sand Gray	MC 20.5%	3	
					4		
1.1	20.2		Top of Rock			Refusal ± 20.2	
			Shale, rhythmically layered with sandstone. Gray, moderately hard, calcareous, fissile; convex segmented layers of sand in shale			Pull 1 20.2 - 25.0 Run 4.8 Rec 3.8 C/L 1.0	
-3.7	25.0						
					Core Box 1	Pull 2 25.0 - 30.0 Run 5.0 Rec 5.0 C/L 1.0	
-8.7	30.0						

Continue on Sheet 2

135

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

21.34

Hole No. I-23

INSTALLATION

Charleston District

SHEET 2

OF 2 SHEETS

Geological Rediversion

CLASSIFICATION OF MATERIAL
Description

% CORE BOX OR
RECOV SAMPLE
ERY NO

REMARKS

drilling time water loss depth of
weathering etc. if significant

Shale, layered with sand
continued

Core

Pull - 3
50.0 - 35.0

Box

Run 5.0

2

Rec 4.5

C/L 0.5

Bottom of Hole

35.0

Hole No. T-24

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET 1 OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" Ø SSS & 4x5" BBL.			
2. LOCATION (Coordinates or Station) N576,040 E2,338,090				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) T-24				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 3			
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 2			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 14.8			
7. THICKNESS OF OVERBURDEN 8.3				16. DATE HOLE STARTED 10 Sept 75			
8. DEPTH DRILLED INTO ROCK 27.4				17. ELEVATION TOP OF HOLE 21.8			
9. TOTAL DEPTH OF HOLE 35.7				18. TOTAL CORE RECOVERY FOR BORING 63.5			
				19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
21.8	0.0		Top of Hole			Blows Ft	
16.8	5.0		SM - Silty Fine Sand Gray	MC 13.9%	1	6 6 6	
14.2	7.6		SC - Clayey Fine Sand Gray		2	Water Table @ 7.0' 10 Sept 75	
13.5	8.3		ML-Clayey Silt Gray-Top of Rock	MC 23.2%	3	Refusal @ 8.3	
11.8	10.0		Siltstone, gray, hard, calcareous cemented			Pull - 1 8.3 - 12.0 Run 3.7 Rec 2.4 C/L 1.3	
6.8	15.0		Sandstone-gray, calcareous moderately hard, friable, 14.0-16.9 very hard and cemented		Core Box 2	Pull - 2 12.0 - 16.7 Run 4.7 Rec 2.2 C/L 2.5	
1.8	20.0		Sandstone interbedded with shale			Pull - 3 16.7 - 21.7 Run 5.0 Rec 2.3 C/L 2.7	
-3.2	25.0		Sandstone, gray, fine to medium grain, soft.		Core Box 1	Pull - 4 21.7 - 26.7 Run 5.0 Rec 5.0 C/L 0.0	
-8.2	30.0		28.7-29.8 Limestone seam			Pull - 5 26.7 - 31.7 Run 5.0 Rec 2.5 C/L 2.5	
Continue on Sheet 2				137			

1-24

Charleston District

Page 2 Steel 13

• CORE BOX OR
RECOVER SAMPLE
ERY NO

REMARKS

Duration: time to elapse, depending on
: : depending on the difficulty.

Shale, gray, soft to moderately hard, fissile, sandy.

Core	Pull - 6
Box	31.7 - 35.7
↓	Ran 4.0
↓	Rec 4.0
↓	C/L 0.0

Bottom of hole 35.7'

Hole No. T - 25

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET 1 OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ϕ SSS & 4x5 1/2 BBL			
2. LOCATION (Coordinates or Station) N 575,790 E2, 339,500				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL C.M.E.			
4. HOLE NO. (As shown on drawing title and file number) T - 25				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 4 UNDISTURBED -	
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 1		15. ELEVATION GROUND WATER 14.9	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				16. DATE HOLE 5 Sept 75		STARTED 5 Sept 75 COMPLETED 5 Sept 75	
7. THICKNESS OF OVERBURDEN 23.3				17. ELEVATION TOP OF HOLE 23.9		18. TOTAL CORE RECOVERY FOR BORING 57.3	
8. DEPTH DRILLED INTO ROCK 11.7				19. SIGNATURE OF INSPECTOR C. Davis			
9. TOTAL DEPTH OF HOLE 35.0'							
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
23.9	0.0		Top of Hole			Blows Ft	
			CL - Silty Clay - Tan			LAB CLASSIFICATION Spl. Class. 7 0.0'-9.0' CH 10	
18.9	5.0			MC 36.6%	1		
					2	Water Table @ 9.0' 5 Sept 75	
13.9	10.0		SM - Silty Fine Sand	MC 22.1%			
					3		
8.9	15.0		SP/SM - Fine and Med. Sand				
					4		
3.9	20.0		Top of Rock 20.0'				
			Shale, layered with sand- stone moderately hard grey, calcareously cemented, fissile, convex segmented layers of sand also mythmically layered 1 mm to 0.25 inch		Core Box 1	Pull - 1 Rec 3.3 20.0' - 23.3 C/L 0.0 Run 3.5	
-1.1	25.0					Pull - 2 23.3 - 27.0 Run 3.7 Rec 1.5 C/L 2.2	
						Pull - 3 Rec 1.7 27.0 - 28.0 C/L 0.3 Run - 2.0	
-6.1	30.0						
Continue on Sheet 2							

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE
23.9

Hole No. T - 25

INSTALLATION

Charleston District

SHEET
OF 2 SHEET

Cooper River Rediversion

ELEVATION DEPTH LEGEND

CLASSIFICATION OF MATERIALS
Description

% CORE BOX OR
RECOVER SAMPLE
ERY NO

REMARKS
Drilling time water loss depth of
weathering etc. if significant

Shale w/Sand Layers - Gray

Full - 4 Rec 0.7
Run 3.0 32.0 C/L 2.3

Sandstone w/Lignite
Dark Gray

Core
Box 1

Full - 5
32.0 - 35.0
Run 3.0 C/L 1.6
Rec 1.4

Bottom of Hole 35.0'

140

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET 1 OF 2 SHEETS	
1. PROJECT <u>Cooper River Rediversion</u>				10. SIZE AND TYPE OF BIT <u>1 3/8" Ø SSS & 4x5 1/2 BBL</u>			
2. LOCATION (Coordinates or Station) <u>N575 360 E2 339,280</u>				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY <u>Mobile District</u>				12. MANUFACTURER'S DESIGNATION OF DRILL C.M.E.			
4. HOLE NO. (As shown on drawing title and file number) T-26				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 3 UNDISTURBED -	
5. NAME OF DRILLER <u>Parden</u>				14. TOTAL NUMBER CORE BOXES 2			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 15.2		16. DATE HOLE STARTED 4 Sept 75 COMPLETED 4 Sept 75	
7. THICKNESS OF OVERBURDEN 14.6				17. ELEVATION TOP OF HOLE 20.2			
8. DEPTH DRILLED INTO ROCK 20.2				18. TOTAL CORE RECOVERY FOR BORING 84.2 %			
9. TOTAL DEPTH OF HOLE 34.8				19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
20.2	0.0		Top of Hole			Blows Ft	
			CL - Silty Clay - Tan		1	8 11 7	
15.2	5.0		SP/SM - Fine and Med. Sand Gray	MC 21.8%	2	Water Table @ 5.0' 4 Sept 75 12 17 32	
10.2	10.0				3	23 22 26 111	
5.6	14.6		Top of Rock 14.6'				
			Shale- & sandstone- dark gray, soft, to moderately hard, calcareously cemented. Shale is fissile with convex segmented bands of sand up to 0.25 inch thick		Core Box 1	Pull - 1 14.6 - 19.8 Run - 5.2 Rec 3.5 C/L 1.7	
0.2	20.0					Pull - 2 19.8 - 24.8 Run 5.0 Rec 4.8 C/L 0.2	
-4.8	25.0						
			shale, dark gray, rhythmically banded with sand		Core Box 2	Pull - 3 24.8 - 29.8 Run 5.0 Rec 4.5 C/L 0.5	
-9.8	30.0						
			Continue on Sheet 2			191	

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

20.2

Hole No.

T - 26

INSTALLATION

SHEET 2

OF 2 SHEETS

Cooper River Rediversion

Charleston District

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
a	b	c	d	e	f	g
			Shale, continued.		Core	Pull - 4
					Box	29.8 - 34.8
			Limestone, dark gray, hard.		2	Run 5.0
			recrystallized carbonate sand			Rec 4.2
			with fragmental shell in mud			C/L 0.8 *L.S. displays
			matrix			remnant cpmqiompod struc-
			Bottom of Hole 34.8			ure.
-14.6	34.8					

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DRILLING LOG		DIVISION	INSTALLATION		SHEET 1 OF 2 SHEETS	
1. PROJECT Cooper River Rediversion		South Atlantic	Charleston District		10. SIZE AND TYPE OF BIT 1 3/8" ϕ SSS & 4x5 1/2 BRL	
2. LOCATION (Coordinates or Station) N 574.900 L 2.341.150			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Mobile District			12. MANUFACTURER'S DESIGNATION OF DRILL C.M.E.			
4. HOLE NO. (As shown on drawing title and file number) T-27			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 5		DISTURBED UNDISTURBED	
5. NAME OF DRILLER Parden			14. TOTAL NUMBER CORE BOXES 1			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> NCLINEL _____ DEG. FROM VERT			15. ELEVATION GROUND WATER 9.1			
7. THICKNESS OF OVERBURDEN 25.5'			16. DATE HOLE 27 Aug 75		STARTED COMPLETED 27 Aug 75	
8. DEPTH DRILLED INTO ROCK 9.5			17. ELEVATION TOP OF HOLE 18.1			
9. TOTAL DEPTH OF HOLE 35.0'			18. TOTAL CORE RECOVERY FOR BORING 77.9			
			19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
18.1	0.0		Top of Hole			Blows Ft
13.1	5.0		SC-Clayey Fine Sand Tan	MC 13.7%	1	LAB CLASSIFICATION Spl. 4 Class. SP-SM SC-SM
8.1	10.0		SM - Silty Fine and Med. Sand Tan		2	Water Table @ 9.0' 27 Aug 75
3.1	15.0		Gray		3	
-1.9	20.0		Silty Fine W/Alternating Clay Layers - Dark Gray	MC 21.4%	4	
-6.9	25.0		Top of Rock 25.5'		5	Refusal @
-11.9	30.0		Shale, Claystone, black soft, fair % of sand included		Core Box 1	Pull - 1 25.5 - 30 Run 4 5 Rec 2.4 C/L 2.1
Continue on Sheet 2						

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 18.1		Hole No. T-27		
PROJECT Cooper River Rediversion		INSTALLATION Charleston District		SHEET 2 OF 2 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-16.9	35.0		Shale, Claystone, cont. 30.0'-35.0' shale laminated with sandstone, hard & soft layers		Core Box 1	Pull - 2 30.0 - 35.0 Run 5.0 Rec 5.0 C/L 0.0
			Bottom of Hole 35.0'			

144

Hole No. T-28

DRILLING LOG		DIVISION	INSTALLATION	SHEET		
		South Atlantic	Charleston District	OF 2	SHEETS	
1 PROJECT Cooper River Reversion			10. SIZE AND TYPE OF BIT 1 3/8" ϕ SSS 4 4x5" PCL			
2 LOCATION (Coordinates or Station) N 574,530 E 2,340,960			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3 DRILLING AGENCY Mobile District			12. MANUFACTURER'S DESIGNATION OF DRILL C.M.E.			
4 HOLE NO. (As shown on drawing title and file number) T-28			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 3 UNDISTURBED -			
5 NAME OF DRILLER Parden			14. TOTAL NUMBER CORE BOXES 1			
6 DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER 12.5			
7 THICKNESS OF OVERBURDEN 17.8			16. DATE HOLE STARTED 28 Aug 75 COMPLETED 29 Aug 75			
8 DEPTH DRILLED INTO ROCK 17.2			17. ELEVATION TOP OF HOLE 19.3			
9 TOTAL DEPTH OF HOLE 55.0'			18. TOTAL CORE RECOVERY FOR BORING 38.9			
			19. SIGNATURE OF INSPECTOR C. Davis Geol. W. Hancock			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
19.3	0.0		Top of Hole			
			CL - Fine Sandy Clay - Tan		1	
14.3	5.0			MC 19.5%	2	Water Table 7.0' 28 Aug 75
11.3	8.0					
9.3	10.0		SP/SM - Fine and Med. Sand Gray & Tan	MC 13.7%	3	
4.3	15.0					
1.5	17.8		Top of Rock 17.8'			
-2.7	20.0		Shale, Black, laminated with 1/16 inch sand layers, fissile, Soft			Pull - 1 Rec 0.3 17.8 - 20.0 C/L 1.9 Run 2.2
-5.7	25.0		Limestone, gray, hard, re- crystallized, vague some alternating layers of clay within the L.S.			Pull - 2 20.0 - 25.0 Run 5.0 Rec 0.4 C/L 1.6
-10.7	50.0		Shale, Black to dark gray, laminated with 1/16 inch sand layers, fissile, soft.			Pull - 3 25.0 - 30.0 Run 5.0 Rec 1.9 C/L 3.1

Continue on Sheet 2

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

19.3

Hole No. T-28

INSTALLATION

SHEET 2

OF 2 SHEETS

Charleston District

CLASSIFICATION OF MATERIALS

% CORE BOX OR
RECOVERY SAMPLE
ERY NO

REMARKS

(Drilling time, water loss, depth of
weathering, etc., if significant)

Sh. 1.0 - continued

Pull - 4
30.0 - 35.0
Run 5.0
Rec 4.1
C/L 0.9

Bottom of Hole

35.0'

146

Hole No. T-29

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS		
1 PROJECT Cooper River Rediversion		South Atlantic	Charleston District			
2 LOCATION (Coordinates or Station) N574,490 E2,343,300			10 SIZE AND TYPE OF BIT 1 3/8" ϕ S&S 4 1/2" BBL			
3 DRILLING AGENCY Mobile District			11 DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
4 HOLE NO. (As shown on drawing title and file number) T-29			12 MANUFACTURER'S DESIGNATION OF DRILL C.M.L.			
5 NAME OF DRILLER Pardon			13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 3			
6 DIRECTION OF HOLE VERTICAL			14 TOTAL NUMBER CORE BOXES 1			
7 THICKNESS OF OVERBURDEN 25.0'			15 ELEVATION GROUND WATER 6.3			
8 DEPTH DRILLED INTO ROCK 10.0'			16 DATE HOLE STARTED 3 Sept 75			
9 TOTAL DEPTH OF HOLE 35.0'			17 ELEVATION TOP OF HOLE 18.3			
			18 TOTAL CORE RECOVERY FOR BORING 80.3			
			19 SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS g (Drilling time, water loss, depth of weathering, etc., if significant)
18.3	0.0		Top of Hole			BLK FF
			CL - Silty Clay - Tan		1	LAB CLASSIFICATION Spl. Class. 2 CH
13.3	5.0		Tan & Gray	MC 32.3	2	
8.3	10.0				3	Water Table = 12.0' 3 Sept 75
5.8	12.5		SM-Silty Fine and Med. Sand Tan & Gray	MC 32.4	4	
3.3	15.0				5	
-1.7	20.0		CL-Silty Clay W/Alternating Sand Layers - Gray	MC 61.5%		
			Shale - rhythmically layered w/sandstone, grey, moderately hard, calcareously cemented, 1mm sand lamina to 0.25 inch convex segments			Pull - 1 20.0 - 25.0 Run 5.0 Rec 3.6 C/L 1.4
-6.7	25.0					
						Pull - 2 25.0 - 30.0 Run 5.0 Rec 2.0 C/L 1.0
-11.7	30.0					
continue on Sheet 2						

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

18.5

Hole No.

INSTALLATION

Charleston District

Upper River Rediversion

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS Drilling time, water, weathering, etc.
			Shale			Pull - 3 30.0 - 35.0
					Core Box 1	Run 5.0 Rec 4.8 C.T. 0.2

Bottom of Hole 35.0'

Note: Pull 3 Stored in Box with Hole T-31

Hole No. 1 - 30

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS		
PROJECT		South Atlantic	Charleston District			
Cooper River Rediversion						
LOCATION (Coordinates or Station)		N 574,450 12,316,680	MSL			
DRILLING AGENCY		Mobile District	MANUFACTURER'S DESIGNATION OF DRILL	C.M.E.		
HOLE NO. (As shown on drawing title and file number)		T-30	TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	5	UNDISTURBED	
NAME OF DRILLER		Parden	TOTAL NUMBER CORE BOXES	1		
DIRECTION OF HOLE		VERTICAL	ELEVATION GROUND WATER	10.6		
THICKNESS OF OVERBURDEN		20.8	DATE HOLE	19 Aug 75	COMPLETED 19 Aug 75	
DEPTH DRILLED INTO ROCK		5.0	ELEVATION TOP OF HOLE	21.1		
TOTAL DEPTH OF HOLE		34.8	TOTAL CORE RECOVERY FOR BORING	100		
			SIGNATURE OF INSPECTOR	C. Davis		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
21.1	0.0		Top of Hole			Blown
			CL - Silty Clay Tan			LAB CLASSIFICATION Spl. Class. 0.0'-9.0' CL-ML
16.1	5.0			MC 11.7	1	
					2	
11.1	10.0		SC - Clayey Fine Sand Tan	MC 20.7	3	Water Table = 10.5' 19 Aug 75
9.1	12.0		SM - Silty Fine Sand Tan	MC 17.7	4	
4.6	16.5					
1.1	20.0		SPSM - Gray Fine and Med. Sand W/Cemented Layers	MC 18.1	5	
-3.9	25.0					
-8.7	29.8		Top of Rock 28.8			Refusal
Continue on Sheet 2						

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

21.1

Hole No. 1 - 30

INSTALLATION

SHEET 2

Lower River Re diversion

Charleston District

100 2 100.5

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS Drilling time water level depth of weathering etc. (meters and feet)
-15.7	31.8		Sandstone-black, calcareous, initially silty, shell bearing hard; becomes soft with depth; cherty fossils.		Core Box 1	Pull - 1 29.8 - 34.8 Run 5.0 Rec 5.0 C/L 0.0

Bottom of Hole
34.8'

Hole No. T - 31

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Charleston District	SHEET 1 OF 2 SHEETS
1. PROJECT Cooper River Rediversion		10. SIZE AND TYPE OF BIT 1 3/8" ϕ SSS & 4x5" BBI		
2. LOCATION (Coordinates or Station) N 573,940 E 2,347,770		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL		
3. DRILLING AGENCY Mobile District		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314		
4. HOLE NO. (As shown on drawing title and file number) T-31		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 7		
5. NAME OF DRILLER Garden		14. TOTAL NUMBER CORE BOXES 1		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER -		
7. THICKNESS OF OVERBURDEN 36.0		16. DATE HOLE 26 Aug 75		
8. DEPTH DRILLED INTO ROCK 0.0		17. ELEVATION TOP OF HOLE 19.1		
9. TOTAL DEPTH OF HOLE 36.0		18. TOTAL CORE RECOVERY FOR BORING 75		
		19. SIGNATURE OF INSPECTOR C. Davis		




ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	Blows Ft
19.1	0.0		Top of Hole				
			CH-Tan & Gray	MC 11.5%			4
14.1	5.0						6
12.6	6.5		Gray		1		6
							10
8.6	10.5						6
			CL-Gray				10
5.1	14.0			MC 43.6%	2		10
4.1	15.0		SP-SM Gray	MC 18.4%	3		16
2.6	16.5						100
			SM- Cemented Sand w/Clay and Rock Lenses	MC 60.7%			150
-0.9	20.0				4		70
							85
							100
-5.4	24.5						50
			W/Clay Layers - 1/2" to 3/4"		5		120
-7.9	27.0						120
			Very Fine Sand - No Rock or Clay Lenses		6		120
-10.9	30.0						140
			Continue on Sheet 2				

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
		19.1		7-31		
Cooper River Rediversion		INSTALLATION		SHEET		
		Charleston District		OF 2 SHEETS		
DATE	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water used, depth of weathering, etc., if significant)
			SM - Gray		6	180
-10.0	33.0		Cement Sand W/ Heavy Shell Content		7	159
-10.0	34.0					100+
			End of Split Spoon Sampling Begin Core Sampling			Due to stiffness of material coring was started at 32.0 from 32.0 or 34.0 the soil was sampled twice.
			Sandstone-Calcareous, dark gray, abundant shell material			Pull - 1
-10.0	35.0		SM-Gray			Core Run 4.0
-10.0	36.0		Cement Sand W/Heavy Shell Content			Box Rec 3.0
					1	C/L 1.0
Bottom of Hole 36.0'						

Hole No. T-32

DRILLING LOG		DIVISION	INSTALLATION		SHEET 1 OF 2 SHEETS	
1. PROJECT Cooper River Rediversion		South Atlantic	Charleston District			
2. LOCATION (Coordinates or Station) N 573,540 E2,547,610			10. SIZE AND TYPE OF BIT 1 3/8" ϕ SSS & 4x5 1/2 BBL			
3. DRILLING AGENCY Mobile District			11. DATUM FOR ELEVATION SHOWN (T.M. or MSL) MSL			
4. HOLE NO. (As shown on drawing title and file number) T-32			12. MANUFACTURER'S DESIGNATION OF DRILL C.M.E.			
5. NAME OF DRILLER Pardon			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 6	UNDISTURBED -	
6. DIRECTION OF HOLE X VERTICAL INCLINED DEG. FROM VERT.			14. TOTAL NUMBER CORE BOXES 0			
7. THICKNESS OF OVERBURDEN 36.0'			15. ELEVATION GROUND WATER 15.0'			
8. DEPTH DRILLED INTO ROCK 0			16. DATE HOLE 25 Aug 75		COMPLETED 25 Aug 75	
9. TOTAL DEPTH OF HOLE 36.0'			17. ELEVATION TOP OF HOLE 20.3'			
			18. TOTAL CORE RECOVERY FOR BORING -			
			19. SIGNATURE OF INSPECTOR C. Davis			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
20.3	0.0		Top of Hole			Blows Ft
			CL - Silty Clay Tan	MC 31.5%	1	10
	14					
15.3	5.0				16	
					21	
					2	Water Table @ 5.3' 25 Aug 75
					3	8
9.8	10.3		MH - Silty Micaceous Clay Tan	MC 52.2%	4	5
					5	
5.3	15.0		SP-SM - Fine and Med. Sand w/Gravel Gray	MC 13.2%	5	39
					44	
0.3	20.0				46	
					42	
					46	
					40	
-4.7	25.0				6	45
						38
						35
-9.7	30.0					36
			Continue on Sheet 2			

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 20.3		Hole No. T-32		
PROJECT Cooper River Rediversion		INSTALLATION Charleston District		SHEET OF 2 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						48
						53
14.7	35.0					57
15.7	36.0					48
Bottom of Hole 36.0'						

154

Hole No. T-33

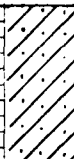
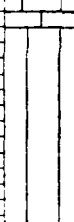



DRILLING LOG	DIVISION South Atlantic	INSTALLATION Charleston District	SHEET 1 OF 2 SHEETS
1. PROJECT Cooper River Rediversion		10. SIZE AND TYPE OF BIT 3/8" ϕ sss & 4x5" BBL	
2. LOCATION (Coordinates or Station) N573.180 E.2,347.440		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL	
3. DRILLING AGENCY Mobile District		12. MANUFACTURER'S DESIGNATION OF DRILL C.M.E.	
4. HOLE NO. (As shown on drawing title and file number) T-33		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 4 UNDISTURBED -	
5. NAME OF DRILLER Parden		14. TOTAL NUMBER CORE BOXES 1	
6. DIRECTION OF HOLE X VERTICAL (INCLINED _____ DEG. FROM VERT.)		15. ELEVATION GROUND WATER 11.2'	
7. THICKNESS OF OVERBURDEN 19.8		16. DATE HOLE STARTED 26 Aug 75 COMPLETED 26 Aug 75	
8. DEPTH DRILLED INTO ROCK 15.2		17. ELEVATION TOP OF HOLE 17.2	
9. TOTAL DEPTH OF HOLE 35.0		18. TOTAL CORE RECOVERY FOR BORING 57.2	
		19. SIGNATURE OF INSPECTOR C. Davis	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
17.2	0.0		Top of Hole			
			C' - Fine Sandy Clay Tan	MC 31.9%	1	4 6 7
12.2	5.0		Tan & Gray			Water Table @ 6.0' 26 Aug 75 14
10.7	6.5		SP-SM - Fine and Medium Sand W/Gravel Gray	MC 18.6%	2	14 14
7.2	10.0				3	12 29
3.9	13.3		Top of Rock			+160
.2	15.0		Shale-black, soft to moder- ately hard, layered with convex segmented plumes of sand, fissile			Pull - 1 13.3 - 16.5 Run 3.2 Rec 1.3 C/L 1.9
			Clay - black, soft, with some sand layering		Core Box 1	Pull 2 16.5 - 21.2 Run 4.7 Rec 4.0 C/L 0.7
-4.8	20.0					
-3.6	21.2					
			CL-Silty Clay W/Alternating Sand layers Dark Gray	MC 66.5%	4	35 32 33 30
-9.8	25.0					
-7.1	27.7					Refusal @ 27.7
-14.8	30.0		Shale, black, soft to moder- ately hard, as 15.0'			Pull - 3 Rec 1.3 27.7 - 30.0 C/L 1.0 Run 2.3
			Continue on Sheet 2			155

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 17.2		Hole No. T-35	
INSTALLATION Clopper River Rediversion		Charleston District		SHEET 2 OF 2 SHEETS	
DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
35.0		Shale, black, soft to moderately hard, laminated with convex segmented plumes of sand.		Core Box 1	Pull - 4 30.0 - 35.0 Run 5.0 Rec 2.1 C/L 2.9
		Bottom of Hole	35.0'		

156

Hole No. T-34 A

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		Charleston District		1 OF 2 SHEETS	
1 PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" Ø SSS & 4X5" BBL			
2 LOCATION (Coordinates or Station) N572,280 E2,348,940				11 DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3 DRILLING AGENCY Mobile District				12 MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4 HOLE NO. (As shown on drawing title and file number) T-34 A				13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 1	
5 NAME OF DRILLER Parden				14 TOTAL NUMBER CORE BOXES		5	
6 DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG. FROM VERT.				15 ELEVATION GROUND WATER		28.5	
7 THICKNESS OF OVERBURDEN 5.0				16 DATE HOLE		STARTED 3 Jun 75 COMPLETED 4 Jun 75	
8 DEPTH DRILLED INTO ROCK 41.0'				17 ELEVATION TOP OF HOLE		35.0'	
9 TOTAL DEPTH OF HOLE 46.0'				18 TOTAL CORE RECOVERY FOR BORING		64.9	
				19 SIGNATURE OF INSPECTOR		C. Davis	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
35.0	0.0		Top of Hole				
30.0	5.0		SC - Clayey Fine Sand Tan	MC 17.6%	1		13 24 38
			Top of Rock				Refusal @ 5.0
25.0	10.0		Limestone, gray, dense, hard				Pull - 1 C/L 1.9 5.0 - 8.4 Run 3.4 Water Table Rec 1.5 6.5 4 Jun 75
			Siltstone, gray, soft, friable layered with sand		Core Box 1		Pull - 2 8.4 - 12.3 Run 3.9 Rec 1.2 C/L 1.7
20.0	15.0		Shale, dark gray, soft, laminated with sands, fissile				Pull - 3 12.3 - 15.1 Rec 2.5 Run 2.8 C/L 0.5
15.0	20.0						Pull - 4 15.1 - 20.4 Run 5.3 Rec 0.0 C/L 5.3
10.0	25.0		Sandstone, gray, soft, friable contains tongues of shale		Core Box 2		Pull - 5 20.4 - 25.4 Run 5.0 Rec 2.0 C/L 3.0
5.0	30.0				Core Box 3		Pull - 6 25.4 - 29.9 Run 4.5 Rec 4.5 C/L 0.0
Continue on Sheet 2				157			

DRILLING LOG (Cont Sheet)

DATE: 5-1-60

55.0'

Hole No.

T-3-A

Upper River Rediversion

INSTALLATION

Charleston District

SHEET

OF 2 SHEETS

ELEVATION	DEPTH	DESCRIPTION	CLASSIFICATION OF MATERIALS	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS
						Drilling time water level depth of weathering of 10 feet (min)
			Sandstone interbedded with shale - soft		Core Pull - 7	
					Box 29.9 - 35.8	
					3 & 4 Run 3.9	
					Rec 3.9	C/L 0.0
35.0					Core Pull - 8	
					35.8 - 38.6	
					Run 4.8	
					Rec 4.8	
					C/L 0.0	
1.0					Core Box 5	
					Pull - 9	
					38.6 - 43.5	
					Run 4.9	
					Rec 5.0	
					C/L 1.9	
			Shale black, soft with layers of sand.			
					Pull - 10	Rec 5.2
			Sandstone, gray, soft, loosely cemented very friable.		43.5 - 46.0	C/G 0.7
41.0					Run 2.5	

Bottom of Hole

46.0'

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COOPER RIVER REDIVERSION PROJECT

INTAKE AND FATHRACE CANALS

APPENDIX A
(PARTIAL)

LABORATORY TESTS

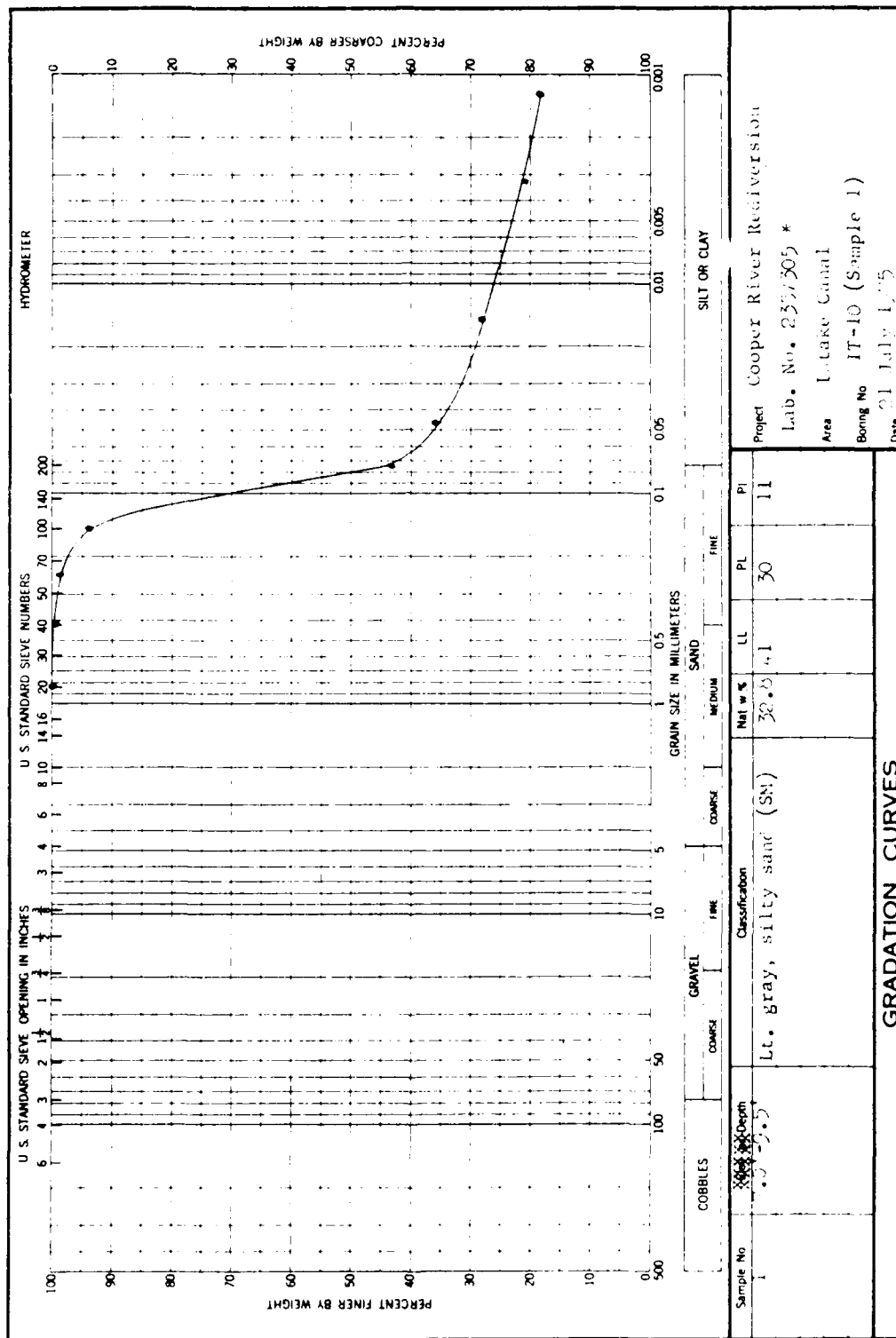
U. S. ARMY ENGINEER DISTRICT, CHARLESTON

CORPS OF ENGINEERS

CHARLESTON, SOUTH CAROLINA

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARILITA, GA. 30061

WORK ORDER NO. 32
Req. No. 30061



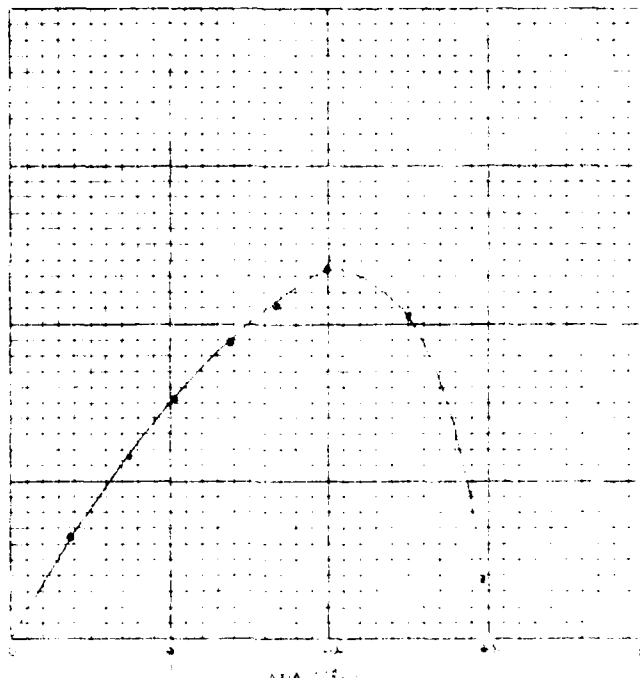
ENG 2087

* UC, Q, R, S, G, T, U, V

T-1

FAILURE SKETCHES

COMPRESSION STRESS (PSI)



STANDARD STRESS

STANDARD STRESS

TESTING

TESTING METHOD

TESTING METHOD

TESTING METHOD

TESTING METHOD

TESTING METHOD

TESTING METHOD

TESTING METHOD

TESTING METHOD

TESTING METHOD

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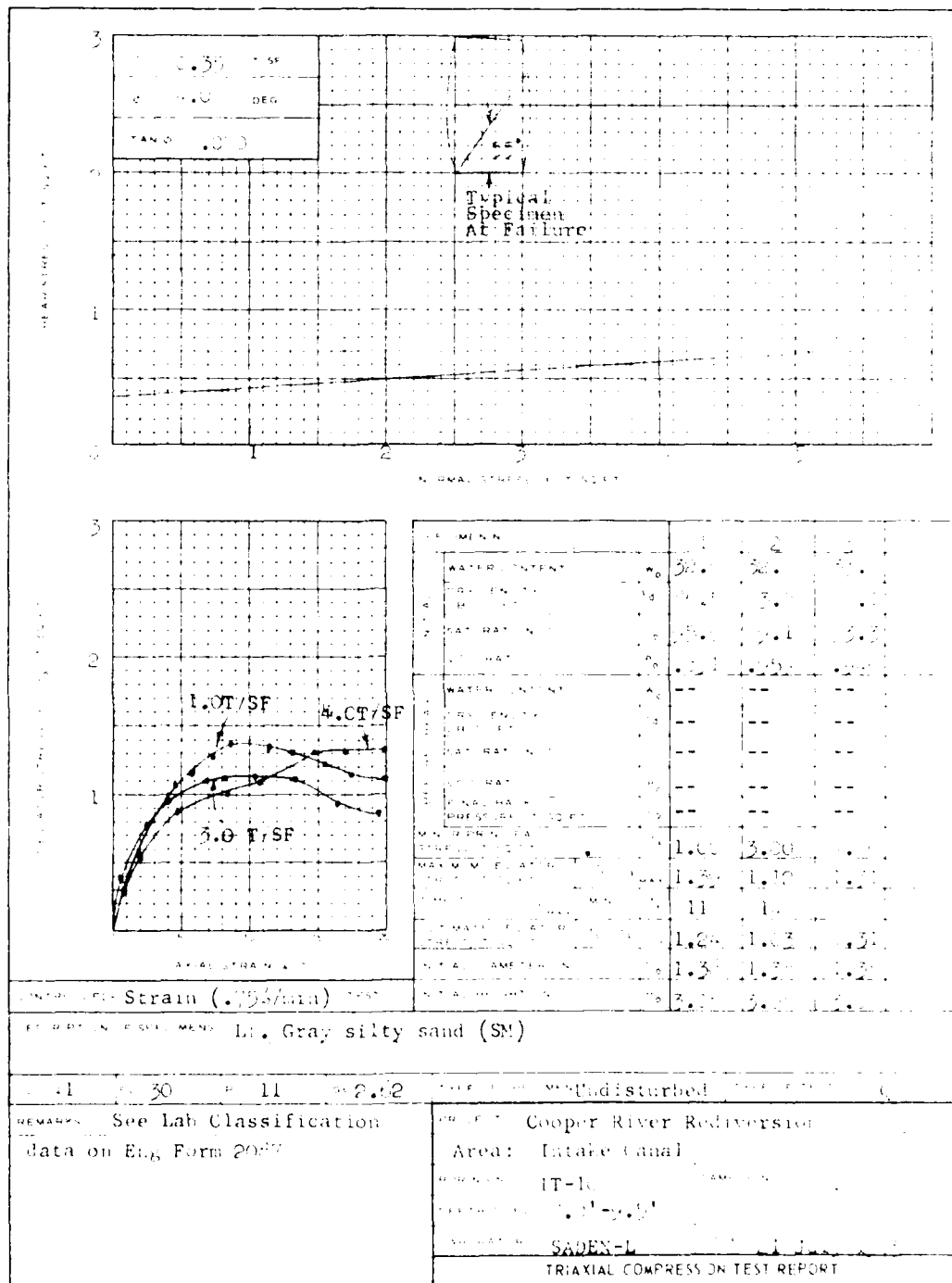
PROJECT	
DATE	
PERFORMED BY	
TESTED BY	

UNCONFINED COMPRESSION TEST REPORT

T-3

ORDER NO. 100-100
 REQ. NO. 100-100

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061



T-3



WORK ORDER NO. 1000
REQ. NO. SAN 4-10-64

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

SHEAR STRENGTH PARAMETERS

maximum	ultimate
$\tau = 1.8$	$\tau = 1.5$
$\sigma_v = 0.0$	$\sigma_v = 0.0$
$c = 0.0$	$c = 0.0$
$\phi = 0.0$	$\phi = 0.0$

T/SQ FT

TEST NO		1	2		
INITIAL	WATER CONTENT	W _i 33.5 %	33.5 %	%	%
	VOID RATIO	e _i 1.09	1.01		
	SATURATION	S _i 80.7 %	88.1 %	%	%
	DRY DENSITY, LB/CU FT	γ _d 12.2	12.0		
VOID RATIO AFTER CONSOLIDATION		e _c 0.771	0.701		
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t ₅₀ 3	1		
FINAL	WATER CONTENT	W _f 25.1 %	28.2 %	%	%
	VOID RATIO	e _f 0.57	0.60		
	SATURATION	S _f 100.0 %	100.0 %	%	%
	NORMAL STRESS, T/SQ FT	σ 4.0	4.0		
MAXIMUM SHEAR STRESS, T/SQ FT		τ _{max} 1.71	2.10		
ACTUAL TIME TO FAILURE, MIN		t _f 210	210		
RATE OF STRAIN, IN / MIN		0.000	0.000		
ULTIMATE SHEAR STRESS, T/SQ FT		τ _{ult} 1.44	1.44		

TYPE OF SPECIMEN Undisturbed

CLASSIFICATION Lt. Gray silty sand (SM)

LL 41 PL 30

SEE LAB CLASSIFICATION DATA ON

REMARKS ENG FORM 208

PROJECT Cooper River Rediversion

Lab. No. 275/30

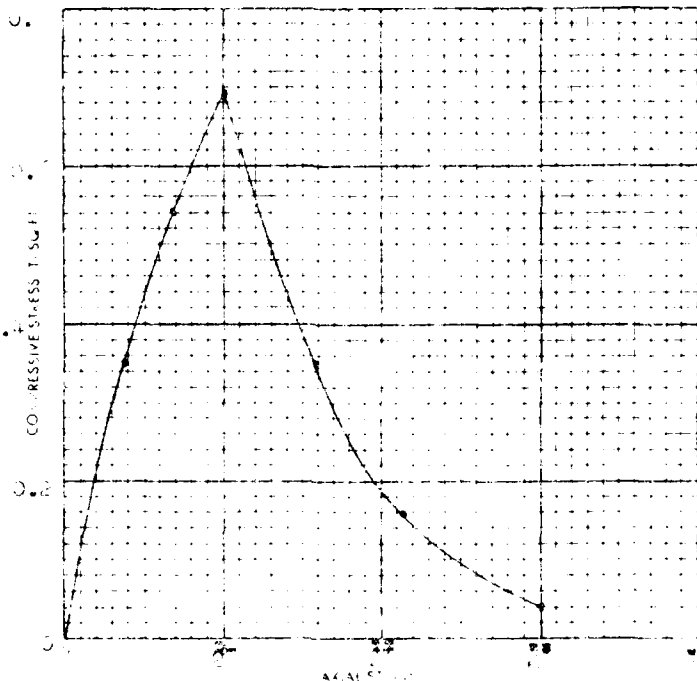
AREA Intake Canal

BORING NO IT-10 SAMPLE NO 1

DEPTH 1.0'-1.5'

DATE 21 July 1964

T-5

[illegible]

1. 1000 2. 1000 3. 1000 4. 1000 5. 1000

4 2 2

1. 2

100

1

3.

100

10

1

11

11

100-443887-100
JAMES EARL RAY, JR.
200

2. 64

PROJECT COMPLETION DATE: 11/1/2010

ARE: [REDACTED]

17-1

1000 12.0 12.0

94516 P. 1.

147 21 July 1972

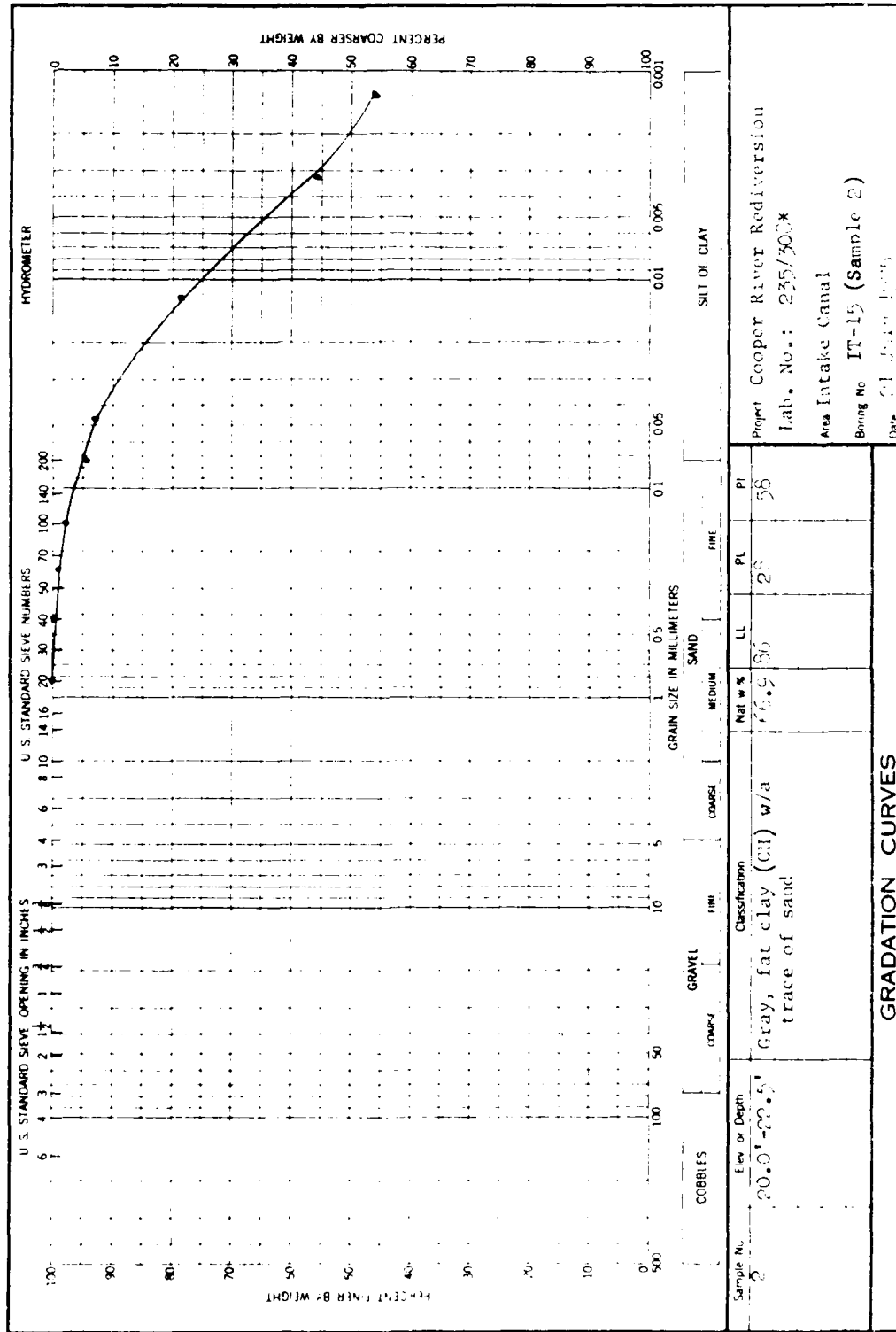
UNCONFINED COMPRESSION TEST REPORT

UNCLAS 3659

T-6

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

WORK ORDER NO. 13
Req. No. SAND-13-20

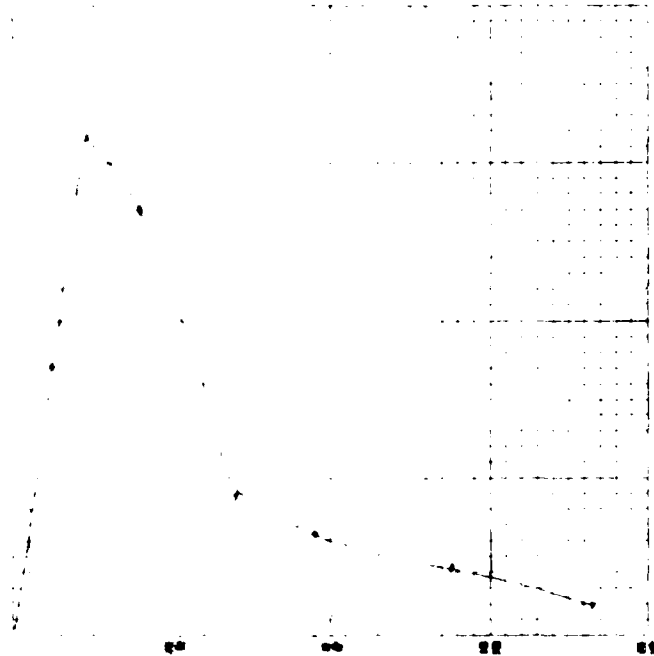


ENG 2087

XUG, Q, R, S GPN Tests

1-7

FAILURE POINT



TEST NO. 3659

DATE OF TEST

TESTER

TEST LOCATION

TEST METHOD

TEST SPECIFICATION

TEST MATERIAL

TEST EQUIPMENT

TEST OPERATOR

TEST DATE

TEST RESULTS

TEST COMMENTS

TEST SIGNATURE

TEST LOCATION

TEST DATE

PROJECT

TEST NO.

TEST DATE

TEST LOCATION

UNCONFINED COMPRESSION TEST REPORT

TEST NO. 3659

F-8

WATER CONTENT (w)
 DRY DENSITY (d)
 SATURATION (s)
 VOID RATIO (e)

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, Marietta, GA. 30061

Shear Stress vs. Normal Stress

$c = 0.50$ T/SF
 $\phi = 0.0$ DEG
 $\tan \phi = .000$

Typical Specimen at Failure

Deviator Stress vs. Axial Strain

SPECIMEN NO.		1	2	3
BEFORE SHEAR	WATER CONTENT %	w ₀ 70.9	70.3	70.2
	DRY DENSITY LB/CF	d ₀ 57.5	58.0	58.3
	SATURATION %	s ₀ 99.5	100.0	96.7
	VOID RATIO	e ₀ 1.910	1.884	1.869
BEFORE HEAR	WATER CONTENT %	w _c --	--	--
	DRY DENSITY LB/CF	d _c --	--	--
	SATURATION %	s _c --	--	--
	VOID RATIO	e _c --	--	--
FINAL PORE PRESSURE T/SF		u ₀ --	--	--
MINOR PRINCIPAL STRESS T/SF		σ ₃ 1.00	2.00	4.00
MAXIMUM DEVIATOR STRESS T/SF		σ ₁ - σ ₃ 0.98	1.02	0.24
TIME t ₁ MIN		t ₁ 2	1	2
ULTIMATE DEVIATOR STRESS T/SF		σ ₁ - σ ₃ 0.65	0.51	0.51
INITIAL DIAMETER IN		d ₀ 1.38	1.38	1.38
INITIAL HEIGHT IN		h ₀ 3.08	3.08	3.08

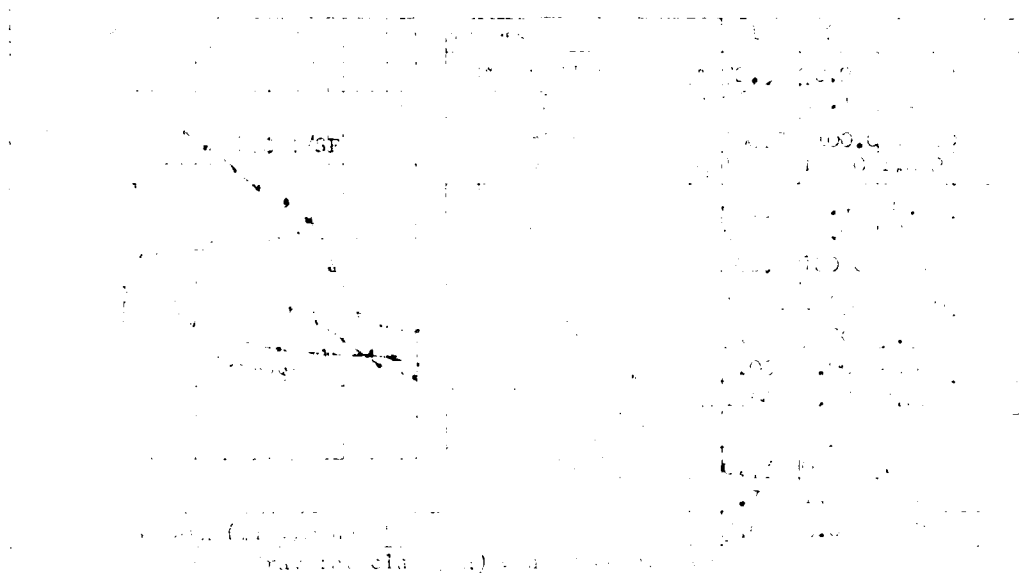
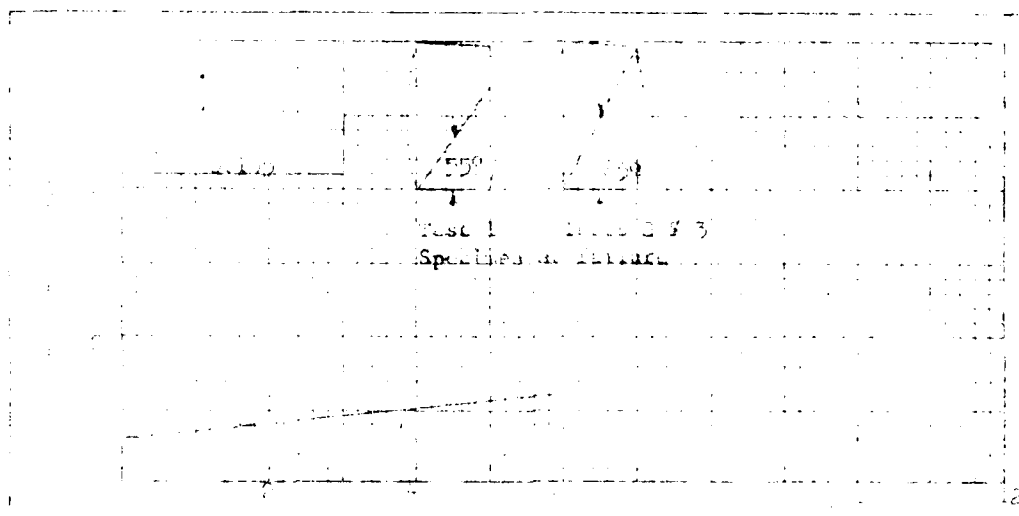
CONTROLLED- **Strain (.70%/min) TEST**

DESCRIPTION OF SPECIMENS **Gray fat clay (CH) w/a trace of sand**

LL 86	PL 26	PI 58	G _s 2.68	TYPE OF SPECIMEN Undisturbed	TYPE OF TEST Q
REMARKS See Lab Classification data on EMG FORM 2087.				PROJECT Cooper River Rediversion	
				Area: Intake Canal	
				BORING NO. IT-15	
				DEPTH - XXXX 20.0'-22.5'	
				ANALYST SADEN-L	
				DATE 31 July 1961	

TRIAXIAL COMPRESSION TEST REPORT

T-9



Graph 1

Specimen 1

Graph 2

Specimen 2

1.5

10

WORK ORDER NO. 100-2
REQ. NO. 5000-10-30

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

HORIZ. DEFORMATION, IN.

NORMAL STRESS, sigma, T/SQ FT

TEST NO		1	2
INITIAL	WATER CONTENT	68.5%	68.5%
	VOID RATIO	1.091	1.904
	SATURATION	97.2%	97.5%
	DRY DENSITY, LB/CU FT	57.9	57.6
VOID RATIO AFTER CONSOLIDATION		1.094	0.930
TIME FOR 50 PERCENT CONSOLIDATION, MIN		12	16
FINAL	WATER CONTENT	38.0%	33.1%
	VOID RATIO	1.018	.807
	SATURATION	100.0%	100.0%
	NORMAL STRESS T/SQ FT	1.0	1.0
MAXIMUM SHEAR STRESS T/SQ FT		1.52	1.40
ACTUAL TIME TO FAILURE MIN		240	150
RATE OF STRAIN, IN/MIN		.0004	.0004
ULTIMATE SHEAR STRESS T/SQ FT		1.27	1.10

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN Undisturbed

CLASSIFICATION Gray fat clay (CH) w/a trace of sand

LL 36 PL 25 PI 58 D10 <.001 mm G. 2.0

SEE LAB CLASSIFICATION DATA ON

REMARKS ENG FORM 2087

PROJECT Cooper River Rediversion

Lab. No. 235/308

AREA Intake Canal

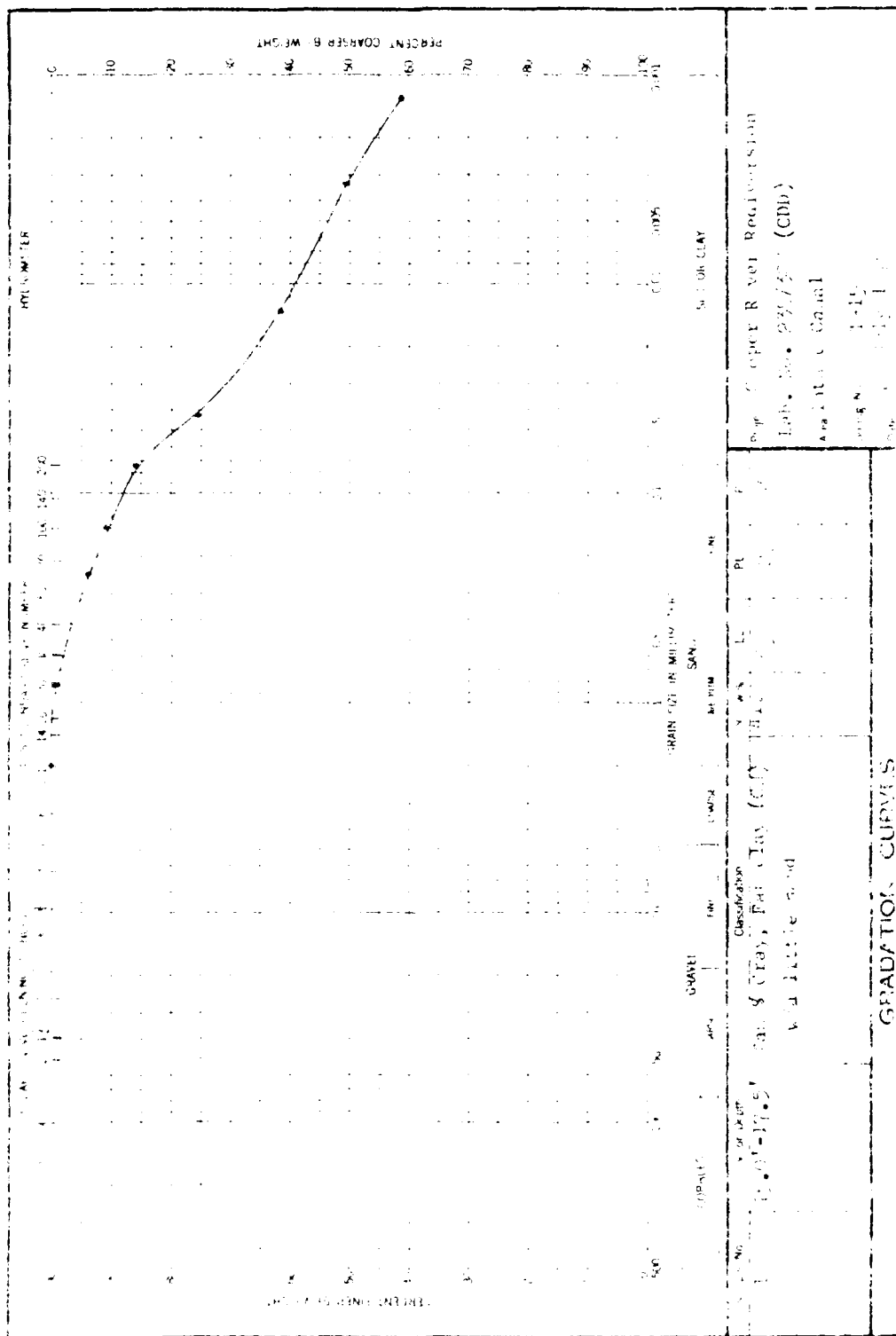
BORING NO IT-15

DEPTH 20.0'-22.5'

SAMPLE NO

DATE 21 July 1975

DIRECT SHEAR TEST REPORT

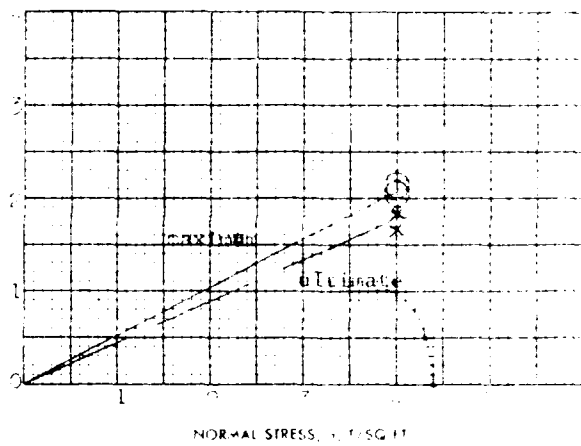
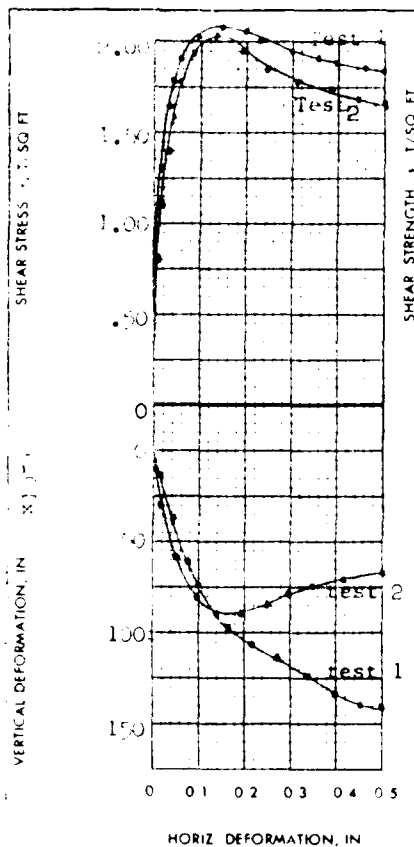


ENG 100 2087

T-12

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, Marietta, GA. 30061

TEST ORDER NO. 239/501
REQ. NO. 239/501



SHEAR STRENGTH PARAMETERS	
max. min.	ultimate
27.5	28.0
TAN	0.501
0.0	0.0
	T/SQ FT

- ☐ CONTROLLED STRESS
☒ CONTROLLED STRAIN

TEST NO.	
WATER CONTENT	W 27.5 28.0
VOID RATIO	e 1.11 1.10
SATURATION	S 100.0% 100.0%
DRY DENSITY	LB/CU FT 1.25 1.25
VOID RATIO AFTER CONSOLIDATION	e 1.11 1.10
TIME FOR 50 PERCENT CONSOLIDATION, MIN	t 135 135
WATER CONTENT	W 27.5 28.0
VOID RATIO	e 1.11 1.10
SATURATION	S 100.0% 100.0%
NORMAL STRESS	T/SQ FT 0.0 0.0
MAXIMUM SHEAR STRESS	T/SQ FT 1.8 1.9
ACTUAL TIME TO FAILURE, MIN	t 135 135
RATE OF STRAIN, IN/MIN	0.001 0.001
ULTIMATE SHEAR STRESS	T/SQ FT 1.8 1.9

TYPE OF SPECIMEN Undisturbed
CLASSIFICATION Tan & Gray fat clay (CH) w/a little sand
PL 239/501
See Lab Classification data on
REMARKS Form 20

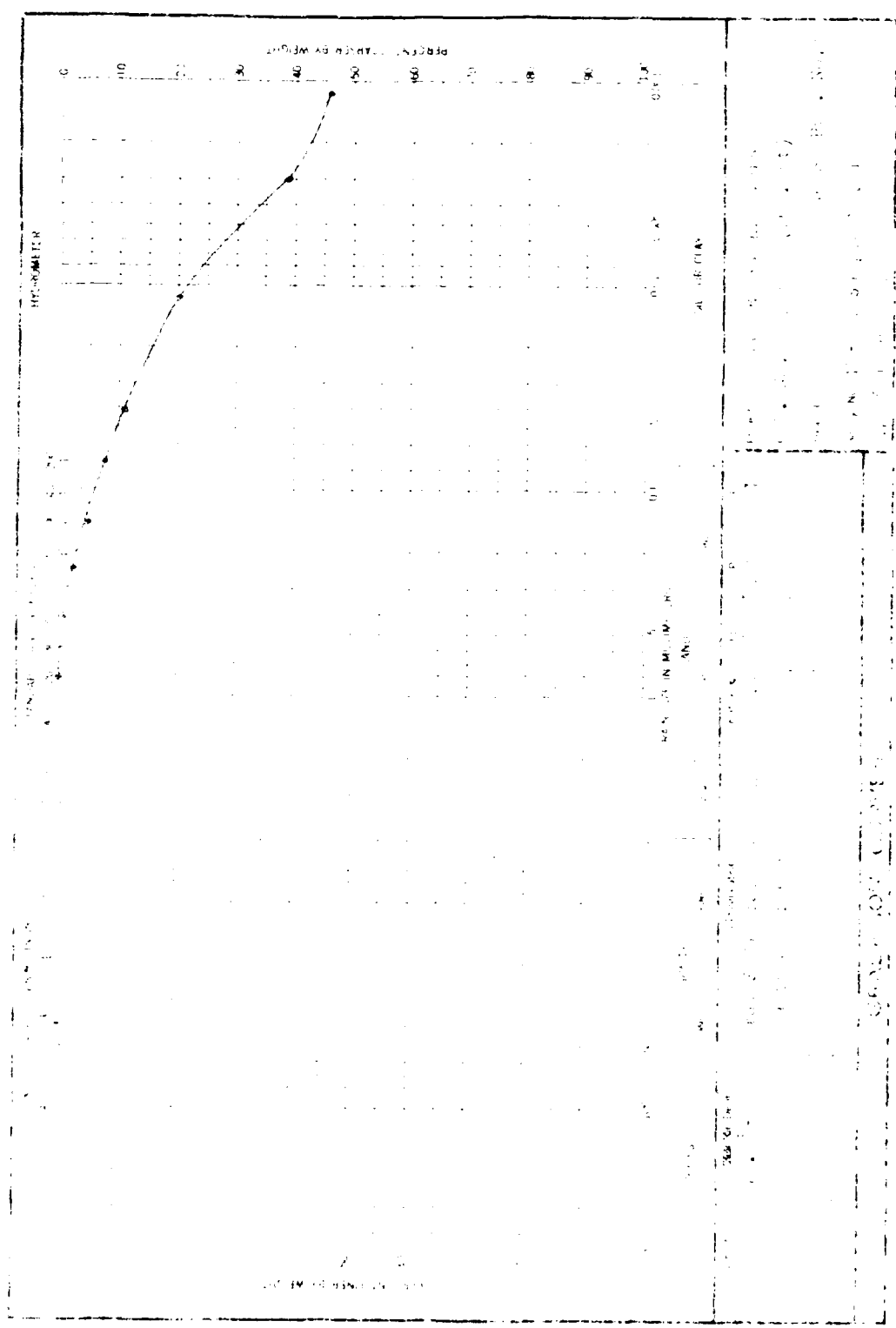
PROJECT Cooper River Pedestrian
Lab. No. 239/501
AREA Intake Canal
BUILDING NO. IT-15
DEPTH 11.7-11.9
DATE 1/1/65

DIRECT SHEAR TEST REPORT

FORM 2092
1 JUN 65

T-13

1. The weight of the sample is 100.00 g.
 2. The weight of the residue is 10.00 g.
 3. The weight of the filtrate is 90.00 g.



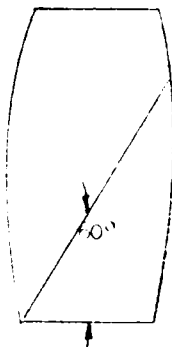
1-17

EN

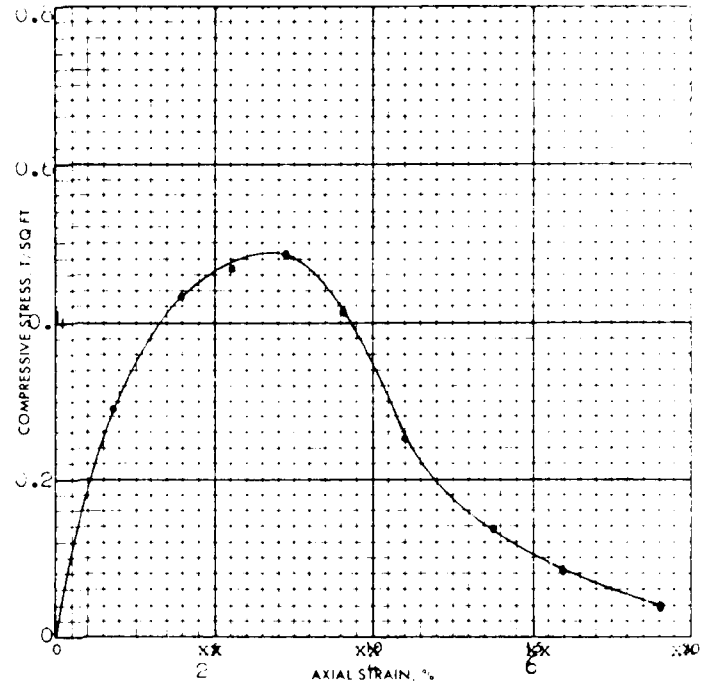
WORK ORDER NO. SAGDA-7-56
REQ. NO. 5203

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 111 SOUTH COBB DRIVE, MARIETTA, GA 30057

FAILURE SKETCHES



☐ CONTROLLED STRESS
☒ CONTROLLED STRAIN



TEST NO.	1
TYPE OF SPECIMEN	Undisturbed
WATER CONTENT	64.3
VOID RATIO	1.705
SATURATION	90.9
DRY DENSITY, LB CU FT	0.16
TIME TO FAILURE, MIN	4
UNCONFINED COMPRESSIVE STRENGTH, T SQ FT	0.45
UNDRAINED SHEAR STRENGTH, T SQ FT	0.25
SENSITIVITY RATIO	
INITIAL SPECIMEN DIAMETER, IN	1.50
INITIAL SPECIMEN HEIGHT, IN	3.05

CLASSIFICATION Gray & Tan fat clay (CH) w/a trace of sand
 LL 75 PI 67

REMARKS See Lab Classification data on ENG Form 2057

PROJECT	Cooper River Rediversion
Lab. No.	2357501
AREA	Intake Canal, beside SC Hwy. No. 3
BORING NO.	IT-21
DEPTH	1.0' - 1.1'
SAMPLE NO.	1
DATE	22 Jun 65

UNCONFINED COMPRESSION TEST REPORT

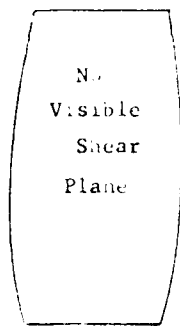
ENG FORM 3659
1 JUN 65

T-15

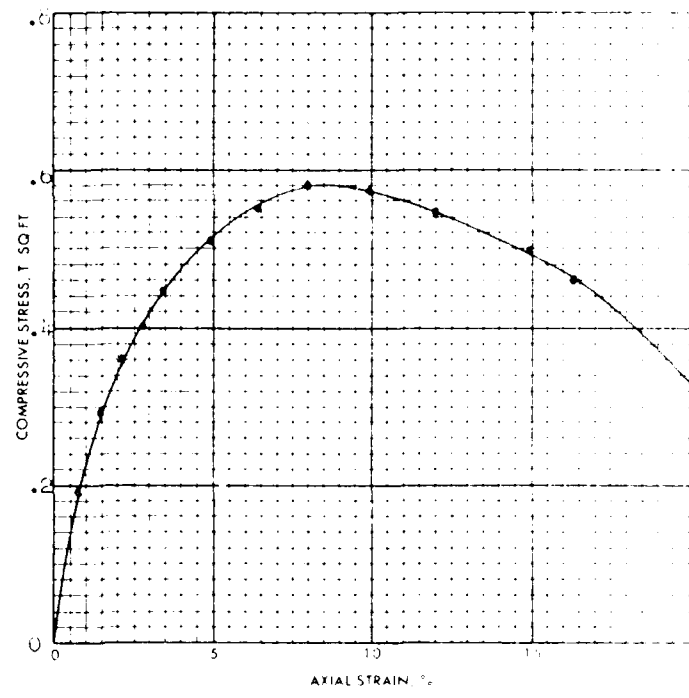
WORK ORDER NO. 3659
REQ. NO. SARCA-100

DEPARTMENT OF THE ARMY, SOUTH FLORIDA DIVISION OF LABORATORY,
CORPS OF ENGINEERS, 700 SOUTH GOLF DRIVE, MIAMI, FL 33134

FAILURE SKETCHES



- ☐ CONTROLLED STRESS
- ☒ CONTROLLED STRAIN



TEST NO.	1
TYPE OF SPECIMEN	Undisturbed
WATER CONTENT	31.1
VOID RATIO	0.870
SATURATION	96.4
DRY DENSITY, LB CU FT	120.1
TIME TO FAILURE, MIN	11
UNCONFINED COMPRESSIVE STRENGTH, T SQ FT	5.18
UNDRAINED SHEAR STRENGTH, T SQ FT	2.59
SENSITIVITY RATIO	1.0
INITIAL SPECIMEN DIAMETER, IN	1.50
INITIAL SPECIMEN HEIGHT, IN	3.00

CLASSIFICATION	Gray lean clay (CL) w/little sand
REMARKS	See Lab Classification data on ENG Form 2007
PROJECT	Cooper River Rediversion
LAB. NO.	2357502
AREA	Intake Canal, beside SC Hwy. No. 1
REFERENCE	IT-21
DATE	1-2-65
BY	1-2-65

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

T-17

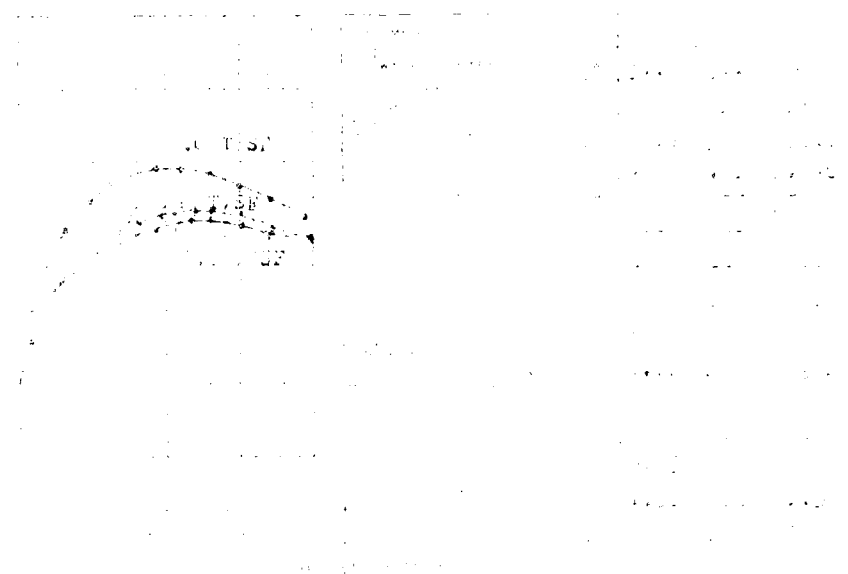
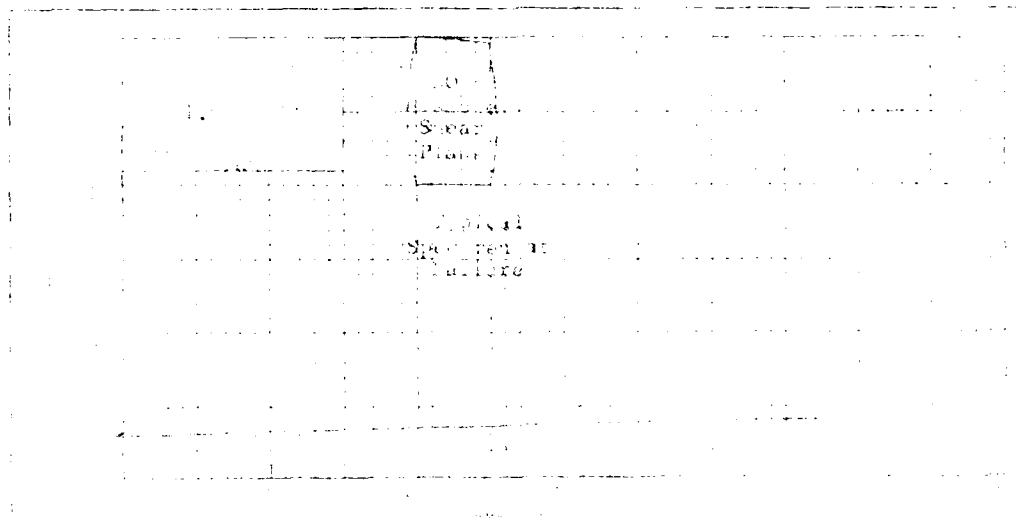


Diagram illustrating a mechanical system, possibly a pump or engine component. The diagram shows a central vertical shaft or piston rod passing through a series of components. Labels include "Sear", "Plane", "Apical", "Shaded", and "Pulley". The diagram is enclosed in a rectangular frame with dashed lines indicating internal structure or flow paths.

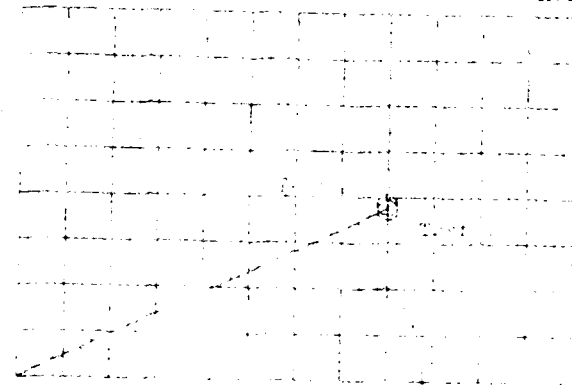
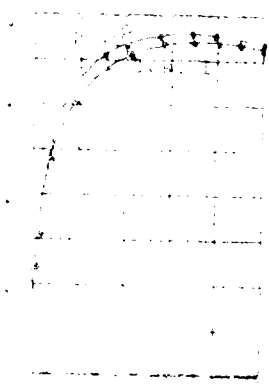
WORK ORDER NO. 10000
REQ. NO. SANCA-10-50

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

<p>$c = 0.10$ T/SF</p> <p>$\phi = 11.0$ DEG</p> <p>$TAN \phi = 0.19$</p>																																																																																							
<p>SHEAR STRESS, τ T/SF</p>																																																																																							
<p>NORMAL STRESS, σ T/SF</p>																																																																																							
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">SPECIMEN NO.</th> <th>1</th> <th>2</th> <th>3</th> </tr> <tr> <td rowspan="4">4</td> <td>WATER CONTENT %</td> <td>w_0 29.0</td> <td>29.2</td> <td>32.1</td> </tr> <tr> <td>DRY DENSITY LB/CF</td> <td>ρ_d 93.3</td> <td>93.7</td> <td>92.3</td> </tr> <tr> <td>SATURATION %</td> <td>s_0 99.2</td> <td>98.8</td> <td>98.5</td> </tr> <tr> <td>VOID RATIO</td> <td>e_0 .007</td> <td>.799</td> <td>.027</td> </tr> <tr> <td rowspan="4">5</td> <td>WATER CONTENT %</td> <td>w_0 27.0</td> <td>26.2</td> <td>24.0</td> </tr> <tr> <td>DRY DENSITY LB/CF</td> <td>ρ_d 96.0</td> <td>96.2</td> <td>100.7</td> </tr> <tr> <td>SATURATION %</td> <td>s_0 99.2</td> <td>98.8</td> <td>99.1</td> </tr> <tr> <td>VOID RATIO</td> <td>e_0 .750</td> <td>.717</td> <td>.713</td> </tr> <tr> <td rowspan="4">6</td> <td>WATER CONTENT %</td> <td>w_0 ---</td> <td>---</td> <td>---</td> </tr> <tr> <td>DRY DENSITY LB/CF</td> <td>ρ_d ---</td> <td>---</td> <td>---</td> </tr> <tr> <td>SATURATION %</td> <td>s_0 ---</td> <td>---</td> <td>---</td> </tr> <tr> <td>VOID RATIO</td> <td>e_0 ---</td> <td>---</td> <td>---</td> </tr> <tr> <td colspan="5"> <p>MINOR PRINCIPAL STRESS, σ_3 T/SF</p> <p>1.00 2.00 4.00</p> </td> </tr> <tr> <td colspan="5"> <p>MAXIMUM PRINCIPAL STRESS, σ_1 T/SF</p> <p>1.31 1.36 2.70</p> </td> </tr> <tr> <td colspan="5"> <p>DEVIATOR STRESS, $\sigma_1 - \sigma_3$ T/SF</p> <p>.45 .55 .70</p> </td> </tr> <tr> <td colspan="5"> <p>WATER CONTENT AT FAILURE, w_f %</p> <p>1.17 1.01 2.44</p> </td> </tr> <tr> <td colspan="5"> <p>DIAPHRAGM PRESSURE, σ_3 T/SF</p> <p>1.30 1.30 1.30</p> </td> </tr> <tr> <td colspan="5"> <p>DIAPHRAGM STRESS, σ_3 T/SF</p> <p>3.08 3.00 3.00</p> </td> </tr> </table>	SPECIMEN NO.		1	2	3	4	WATER CONTENT %	w_0 29.0	29.2	32.1	DRY DENSITY LB/CF	ρ_d 93.3	93.7	92.3	SATURATION %	s_0 99.2	98.8	98.5	VOID RATIO	e_0 .007	.799	.027	5	WATER CONTENT %	w_0 27.0	26.2	24.0	DRY DENSITY LB/CF	ρ_d 96.0	96.2	100.7	SATURATION %	s_0 99.2	98.8	99.1	VOID RATIO	e_0 .750	.717	.713	6	WATER CONTENT %	w_0 ---	---	---	DRY DENSITY LB/CF	ρ_d ---	---	---	SATURATION %	s_0 ---	---	---	VOID RATIO	e_0 ---	---	---	<p>MINOR PRINCIPAL STRESS, σ_3 T/SF</p> <p>1.00 2.00 4.00</p>					<p>MAXIMUM PRINCIPAL STRESS, σ_1 T/SF</p> <p>1.31 1.36 2.70</p>					<p>DEVIATOR STRESS, $\sigma_1 - \sigma_3$ T/SF</p> <p>.45 .55 .70</p>					<p>WATER CONTENT AT FAILURE, w_f %</p> <p>1.17 1.01 2.44</p>					<p>DIAPHRAGM PRESSURE, σ_3 T/SF</p> <p>1.30 1.30 1.30</p>					<p>DIAPHRAGM STRESS, σ_3 T/SF</p> <p>3.08 3.00 3.00</p>				
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<p>CONTROLLED: Strain (.15%/min) TEST</p>																																																																																							
<p>DESCRIPTION OF SAMPLE: Gray lean clay (CL) w/a little sand</p>																																																																																							
<p>4.0 20 25 2.70</p>																																																																																							
<p>REMARKS: See Lab Classification data on ENG Form 2087</p>																																																																																							
<p>Area: Intake Canal, beside SC Hwy. No. 11</p>																																																																																							
<p>PROJECT: IT-21</p>																																																																																							
<p>DATE: 21.0'-21.5'</p>																																																																																							
<p>LABORATORY: SADEN-L</p>																																																																																							
<p>DATE: 23 June 1978</p>																																																																																							
<p>TRIAXIAL COMPRESSION TEST REPORT</p>																																																																																							

ENGINEERING NO. 2009 PREPARED BY: J. H. GIBSON TRANSLUCENT FM 1110-2-1976
Lab. No. 235/30

T-19

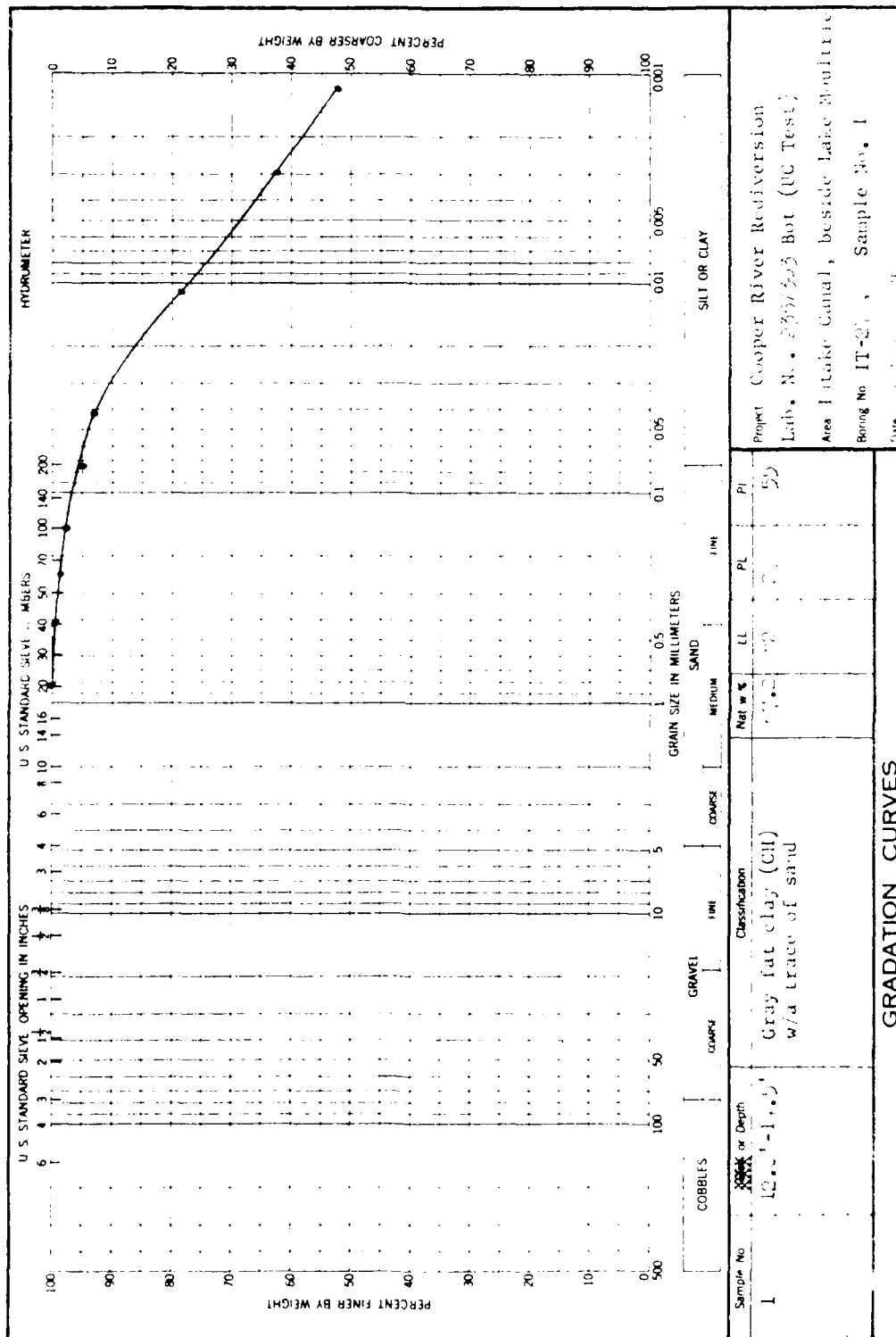


$\gamma_0 = \gamma_1 = \dots = \gamma_{n-1} = 1$, $\gamma_n = 0$.

REPORT OF HEAR TEST REPORT

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
 CORPS OF ENGINEERS, 611 SOUTH CUBB DRIVE, MARLETTA, GA. 30061

WORK ORDER NO. 1
 REP. NO. SARCA-10-7

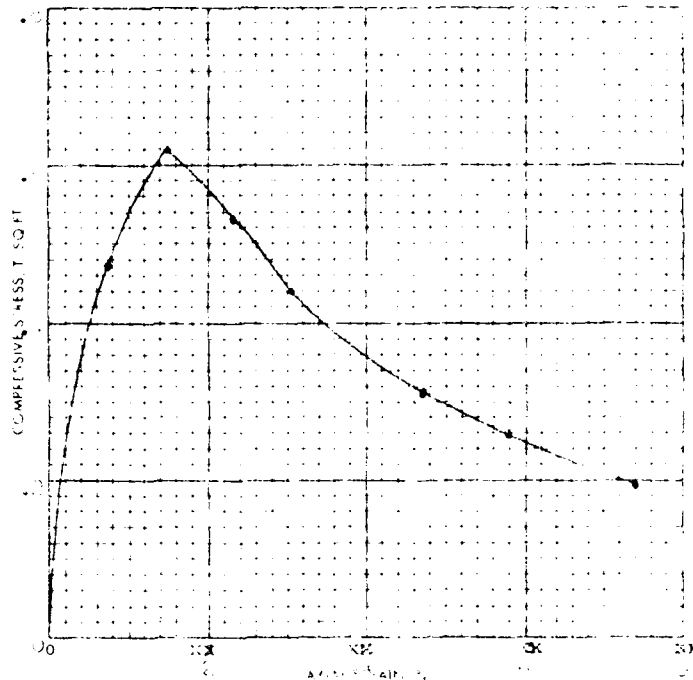


GRADATION CURVES

ENG. 2087

T-21

FAILURE SKETCHES



TEST NO.	1
TEST TYPE	UNCONFINED
TEST METHOD	ASTM D 1586
TEST DATE	10/1/65
TEST TIME	10:00 AM
TEST LOCATION	LABORATORY
TESTER	J. B. BOYCE
TESTER'S SIGNATURE	[Signature]
TESTER'S TITLE	ENGINEER
TESTER'S ORGANIZATION	U.S. ARMY
TESTER'S ADDRESS	1000 G ST. N.W.
TESTER'S CITY	WASHINGTON, D.C.
TESTER'S STATE	D.C.
TESTER'S ZIP	20315
TESTER'S PHONE	222-7221
TESTER'S FAX	
TESTER'S E-MAIL	
TESTER'S WEBSITE	
TESTER'S COMMENTS	

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TESTER'S FAX	
TESTER'S E-MAIL	
TESTER'S WEBSITE	
TESTER'S COMMENTS	

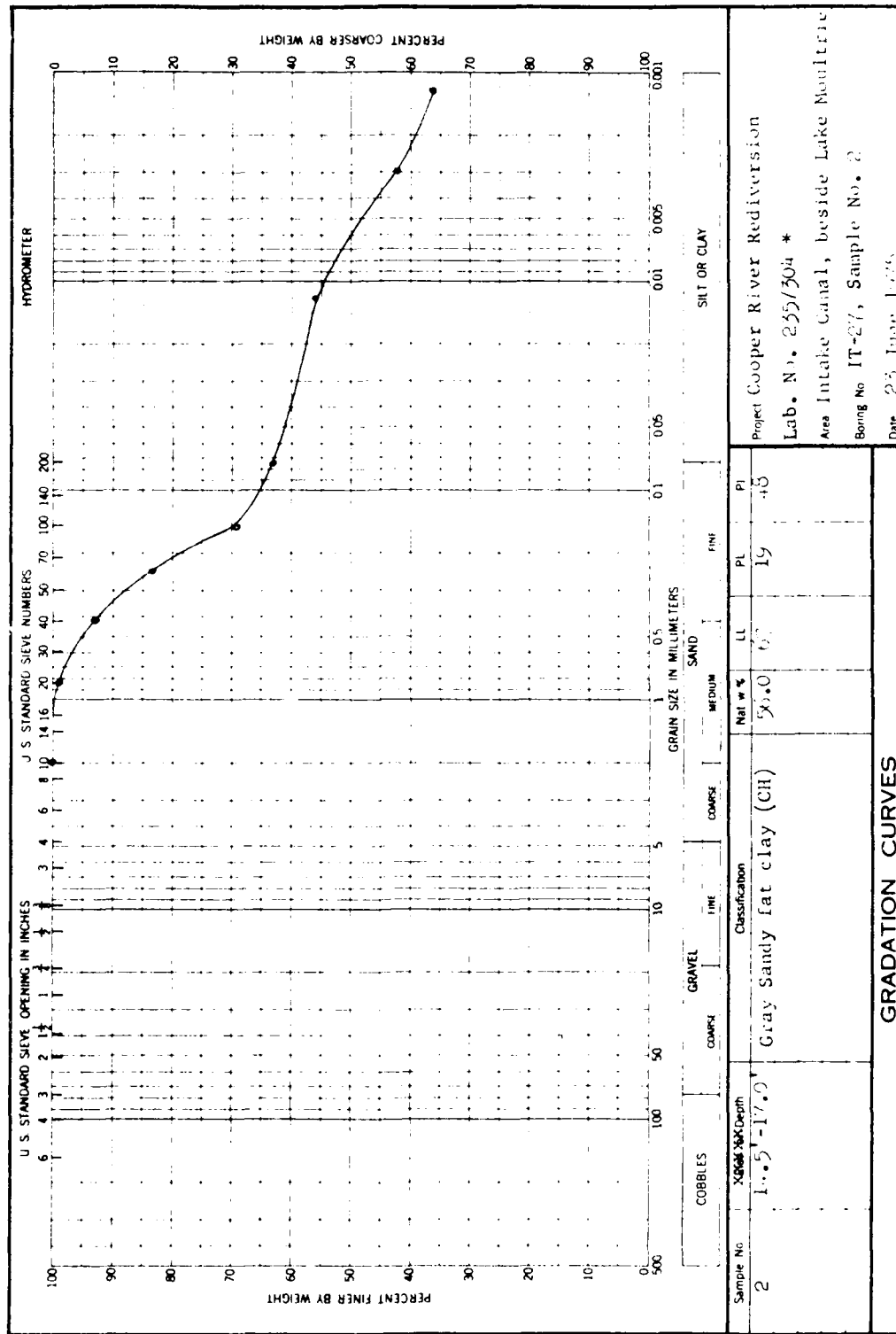
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TEST TYPE	UNCONFINED
TEST METHOD	ASTM D 1586
TEST DATE	10/1/65
TEST TIME	10:00 AM
TEST LOCATION	LABORATORY
TESTER	J. B. BOYCE
TESTER'S SIGNATURE	[Signature]
TESTER'S TITLE	ENGINEER
TESTER'S ORGANIZATION	U.S. ARMY
TESTER'S ADDRESS	1000 G ST. N.W.
TESTER'S CITY	WASHINGTON, D.C.
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TESTER'S COMMENTS	

TEST NO.	1
TEST TYPE	UNCONFINED
TEST METHOD	ASTM D 1586
TEST DATE	10/1/65
TEST TIME	10:00 AM
TEST LOCATION	LABORATORY
TESTER	J. B. BOYCE
TESTER'S SIGNATURE	[Signature]
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TESTER'S E-MAIL	
TESTER'S WEBSITE	
TESTER'S COMMENTS	

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH CUBB DRIVE, MARILETTA, GA. 30061

WORK ORDER NO. 3453
Req. No. SANGA-10-2

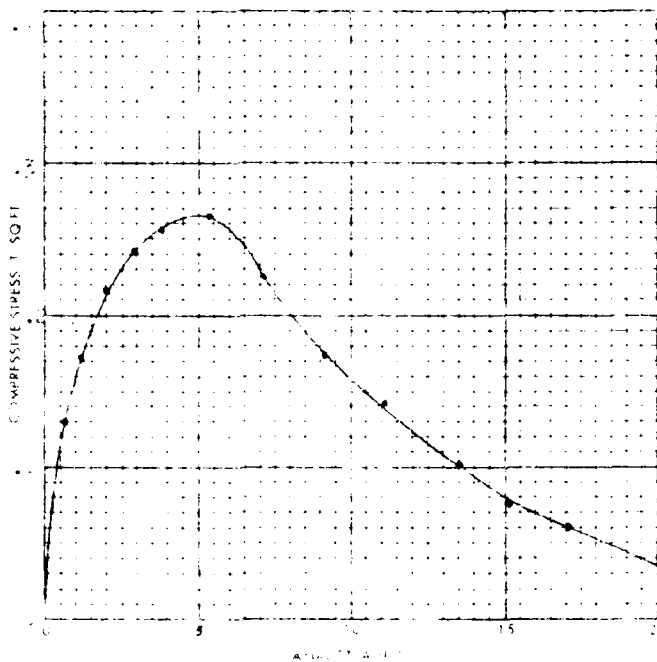


FAILURE SKETCHES



VERTICAL STRAIN

HORIZONTAL STRAIN



TEST METHOD

WATER CONTENT

AT

TEST DATE

TEST LOCATION

TEST DESCRIPTION

TEST RESULTS

TESTER'S NAME (PRINTED)

TESTER'S SIGNATURE

TESTER'S TITLE

TESTER'S ORGANIZATION

TESTER'S ADDRESS

TESTER'S PHONE NUMBER

TESTER'S FAX NUMBER

TESTER'S E-MAIL ADDRESS

TESTER'S WEBSITE ADDRESS

TESTER'S SOCIAL MEDIA

TESTER'S OTHER CONTACT INFO

TEST METHOD

WATER CONTENT

AT

TEST DATE

TEST LOCATION

TEST DESCRIPTION

TEST RESULTS

TESTER'S NAME (PRINTED)

TESTER'S SIGNATURE

TESTER'S TITLE

TESTER'S ORGANIZATION

TESTER'S ADDRESS

TESTER'S PHONE NUMBER

TESTER'S FAX NUMBER

TESTER'S E-MAIL ADDRESS

TESTER'S WEBSITE ADDRESS

TESTER'S SOCIAL MEDIA

TESTER'S OTHER CONTACT INFO

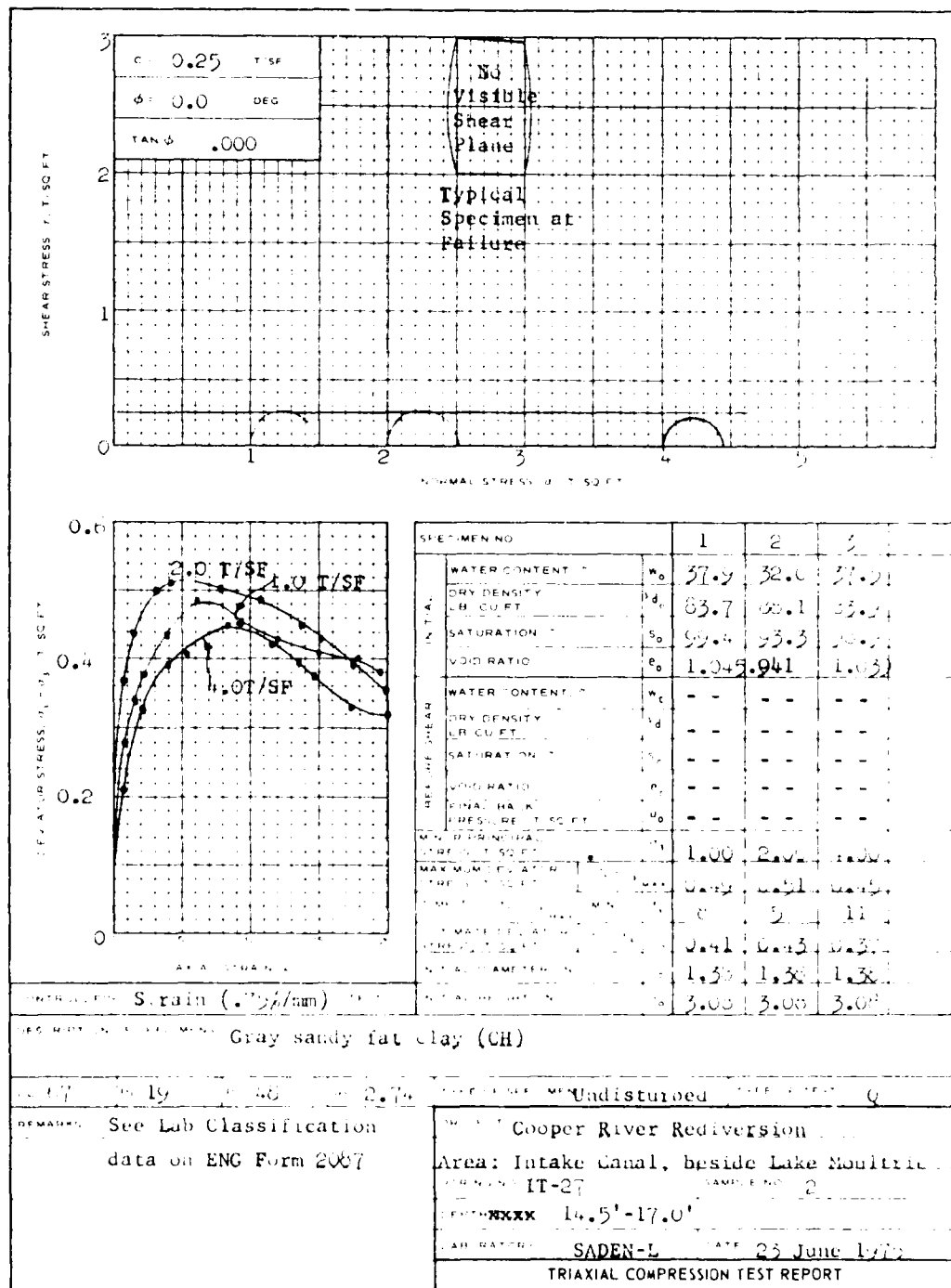
ENG FORM 3659
1 JUN 65

PROJECT	Super River Rehabilitation
DATE	12/13
AREA	1000 G. Canal, beside Lake Moultrie
DEPTH	2
TESTER	10-1-1
DATE	June 1
UNCONFINED COMPRESSION TEST REPORT	

T-24 T-23

WORK ORDER NO. 30061
REQ. NO. SANCA-175-32

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061



ENG. FORM NO. 3089 (REV. JUNE 1972) PREVIOUS EDITIONS OBSOLETE

TRANSLUCENT (EM 1110-2-1906)

Lab. No. 235/304

T-25

WORK ORDER NO. 235/504
REQ. NO. 235/504

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

10% STRAIN

SHEAR STRESS, τ , T/SQ FT

VERTICAL DEFORMATION, IN

HORIZ. DEFORMATION, IN

SHEAR STRENGTH, τ , T/SQ FT

NORMAL STRESS, σ , T/SQ FT

TEST NO		1	2
INITIAL	WATER CONTENT	50.7%	43.7%
	VOID RATIO	1.722	1.505
	SATURATION	90.3%	76.5%
	DRY DENSITY, LB./CU. FT.	12.0	11.7
FINAL	VOID RATIO AFTER CONSOLIDATION	1.020	1.721
	TIME FOR 50 PERCENT CONSOLIDATION, MIN	0	0
	WATER CONTENT	24.3%	17.4%
	VOID RATIO	0.5	0.47
SATURATION		100.0%	100.0%
NORMAL STRESS, T/SQ FT		4.00	4.00
MAXIMUM SHEAR STRESS, T/SQ FT		1.36	1.31
ACTUAL TIME TO FAILURE, MIN		180	160
RATE OF STRAIN, IN./MIN		0.0008	0.0008
ULTIMATE SHEAR STRESS, T/SQ FT		1.02	0.94

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

SHEAR STRENGTH PARAMETERS

	maximum	ultimate
ϕ	18.5°	14.8°
TAN ϕ	0.335	0.265
c	0.6	0.0

T/SQ FT

TYPE OF SPECIMEN Undisturbed

CLASSIFICATION Gray sandy fat clay (CH)

LL 67 PL 19

PI 0.8 Dia <.001 mm G.

REMARKS See Lab Classification data on ENG Form 20-7

PROJECT Cooper River Rediversion

Lab. No. 235/504

AREA Intake Canal, beside Lake Meultric

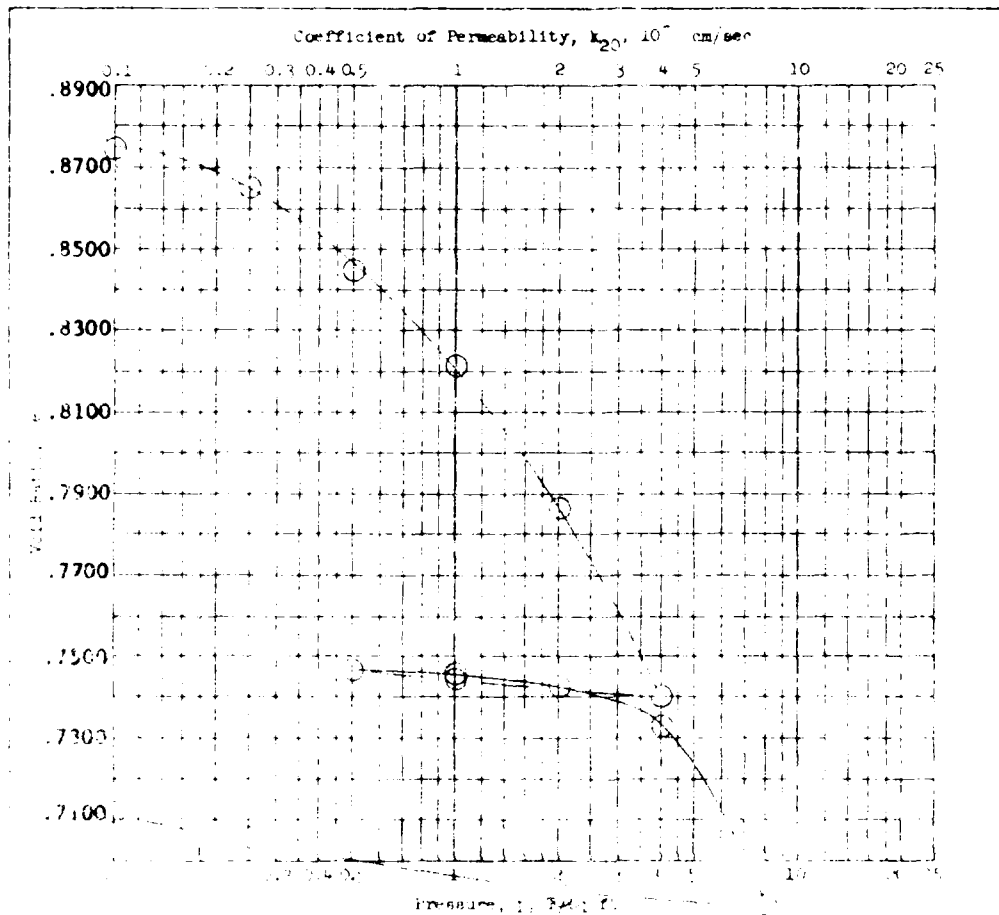
BORING NO IT-27 SAMPLE NO 2

DEPTH 14.5'-17.0' DATE 23 June 1975

DIRECT SHEAR TEST REPORT

WORK ORDER NO. SANLA-75-32
REQ. NO. 9283

DEPARTMENT OF THE ARMY, DISTRICT ENGINEER, SAN FRANCISCO, CA. 30061
CORPS OF ENGINEERS, 675 SOF OF CORP ENGINEER, SAN FRANCISCO, CA. 30061

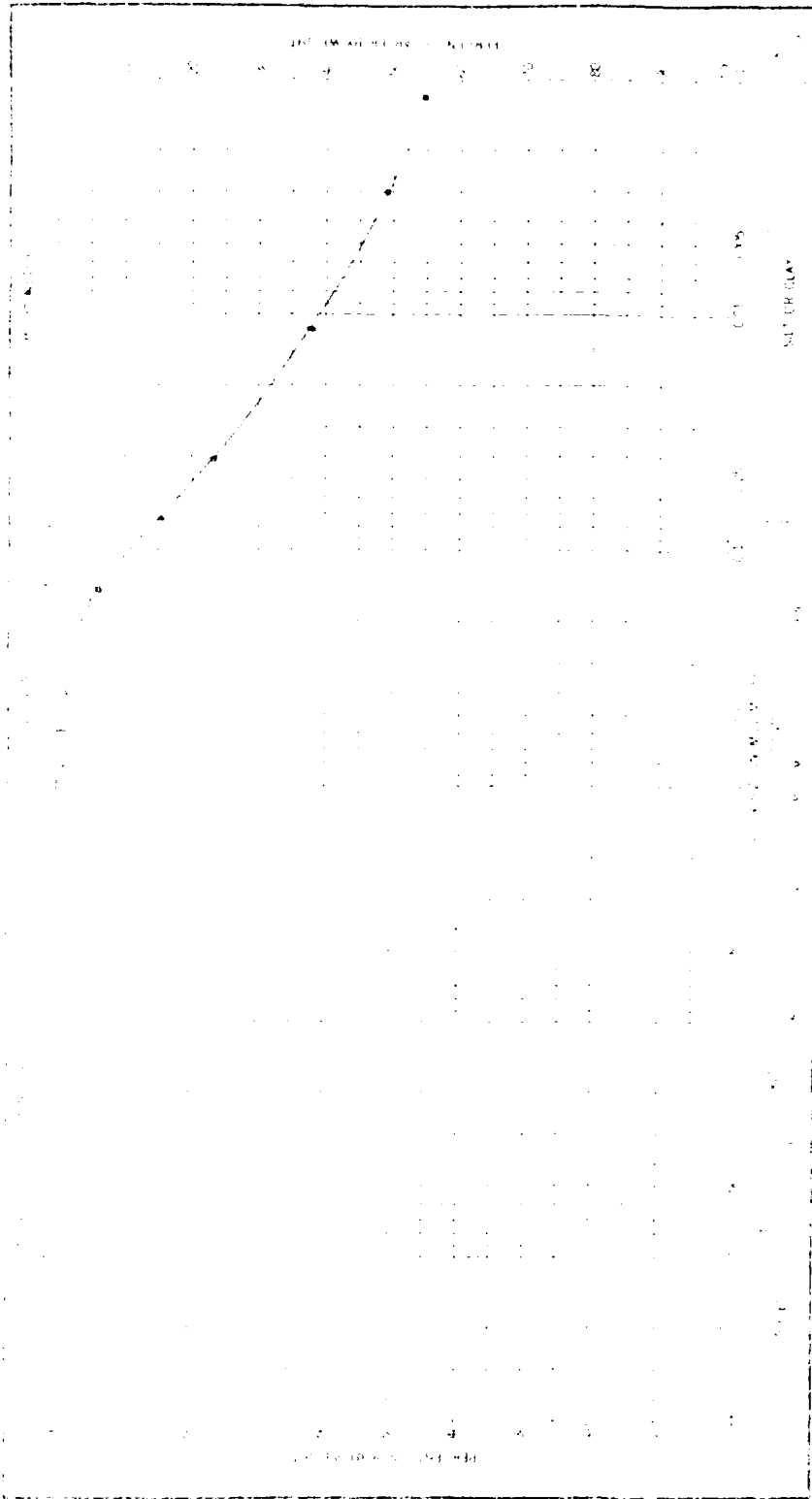


Undisturbed		Before Test		After Test	
3.26	26	Water Content, w , %	31.9	28.0	
		Voids Ratio, e	0.899	0.712	
		Porosity, n , %	97.3	100.0	
		Dry Density, γ_d	90.0		
Gray sandy fat clay (CI)		Charleston District COOPER RIVER REDIVERSION			
2.74		Lab. No. 235/304			
0.001 mm		Area Intake Canal			
See lab classification data on ZMG Form 2087 reported previously.		Boring No. IT-27		Sample No. 2	
Specimen flooded throughout test.		Depth 14.5' - 17.0'		Date 11 Nov 1975	
CONSOLIDATION TEST REPORT					

T-29

boring	Elevation sample	Type test	C (tsf)	ϕ	Classification
14	60.5-62.5	DS	0	38°	AC
15	70.4-72.9	Q	.4	12°	AC
	70.4-72.9	R	.4	22.5° (Total)	
			0	36° (Effective)	AC
	64.9-67.4	Q	.25	9°	AC
	64.9-67.4	R	.27	14.5° (Total)	
			0	34.5° (Effective)	AC
16	67.8-70.3	Q	.34	0°	CL
	67.8-70.3	R	.3	11.5° (Total)	
			0	25.5° (Effective)	CL
	65.8-65.8	Q	.35	9°	CH
	65.8-65.8	R	.25	11° (Total)	
			0	25.5° (Effective)	CH
17	62.0-64.5	Q	.65	0°	CL
	62.0-64.5	R	.25	14.5° (Total)	
			0	32.0° (Effective)	CL
	56.5-57.5	Q	.41	1.0°	CH
	56.6-57.5	R	.16	19° (Total)	
			0	20.5° (Effective)	CH
	55.0-56.5	DS	0	39°	SM-SC

COOPER RIVER
LAB. NO. 235/789



COOPER RIVER	
Lab. No. 235/789	
Powerhouse	
IT-23-1	
27 January 1976	
2.35 - 6.0	Grey and tan flat sand (CH) 27.5 34 21 33
1/2 Huckle sand	
CALCULATION CURVES	

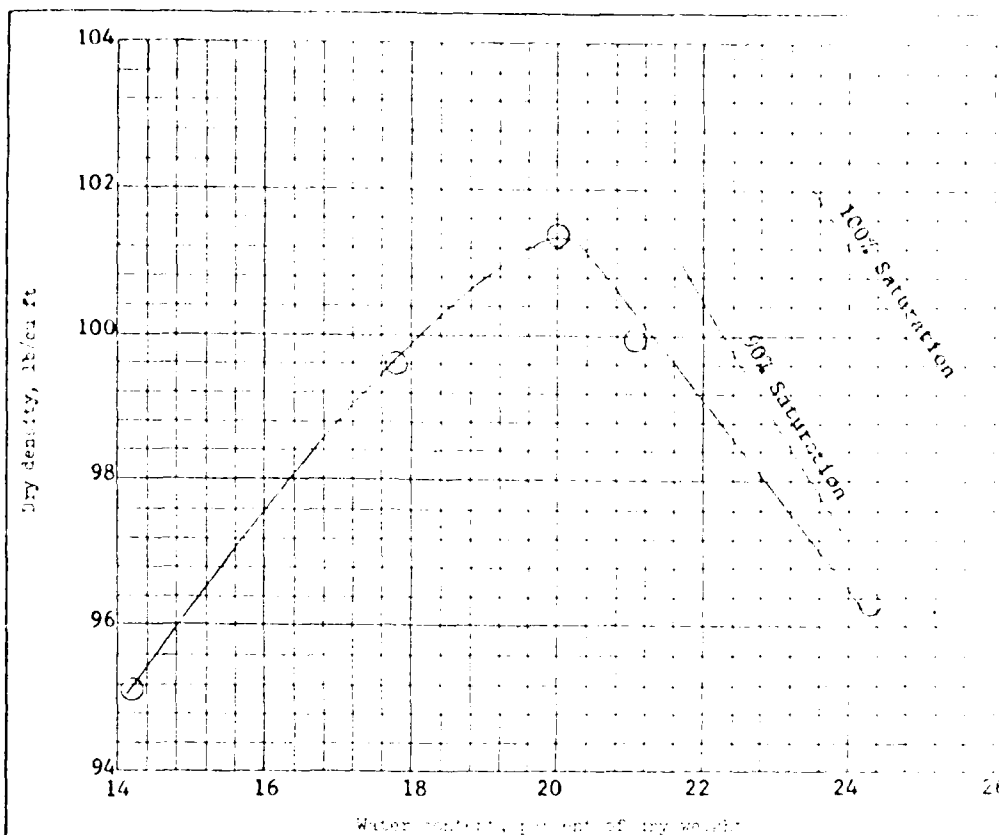
ENCLOSURE 2007

Stnd. Comp., Remolded C, R, & CFF

T-30

WORK ORDER NO. 9410
Req. No. NAFEN-76-2

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061



Standard _____ compaction test (EM-1110-2-1906)

25 blows per each of 3 layers, with 5.5 inch diameter
12.0 inch drop. 4.0 inch diameter mold

Sample No.	Depth	Classification	G	LL	PL	I	P
--	2.0' - 6.0'	Gray and tan fat clay (CH) w/a little sand	2.66	54	21	0	0

Sample No.	Bags	Plastic Bag
Natural water content, percent	---	27.2
Optimum water content, percent	20.0	---
Max dry density, lb/cu ft	101.3	---

Remarks: See lab classification data on ENG Form 2087.
Project: COOPER RIVER
Lab. No. 235/789
Area: Powerhouse
Boring No. IT-2E-1
Date: 27 Jan 1976

COMPACTION TEST REPORT

ENG FORM 1 JUN 65

2091

PREVIOUS EDITIONS ARE OBSOLETE

(TRANSLUCENT)

T-31

AD-A149 732

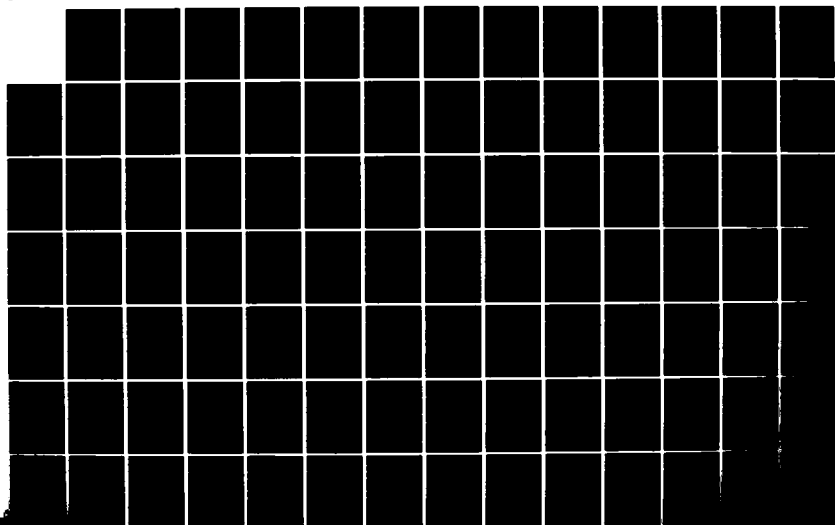
COOPER RIVER REDIVERSION PROJECT LAKE MOULTRIE AND
SANTEE RIVER SOUTH CAR. (U) CORPS OF ENGINEERS
CHARLESTON SC CHARLESTON DISTRICT JUN 76

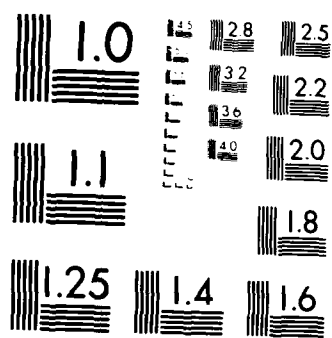
3/5

UNCLASSIFIED

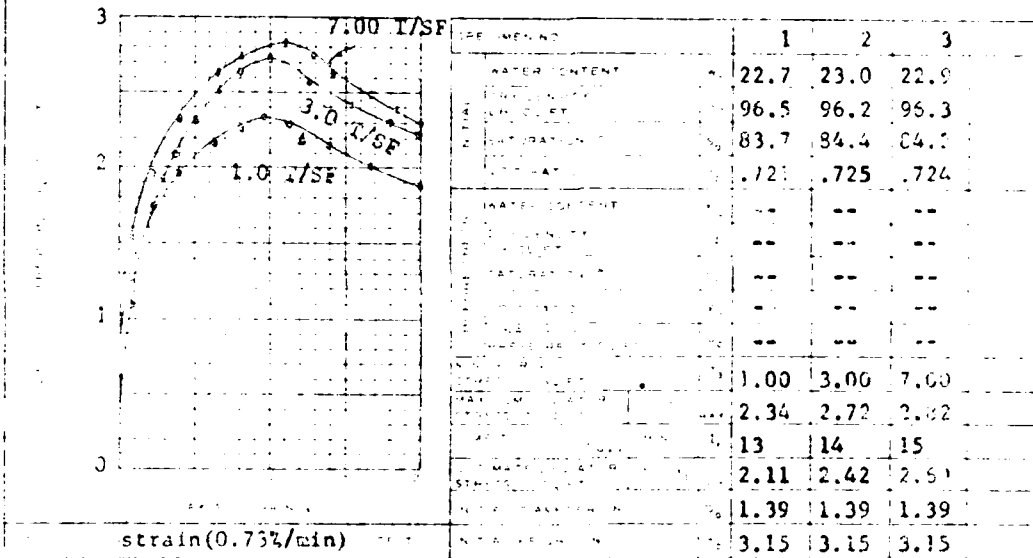
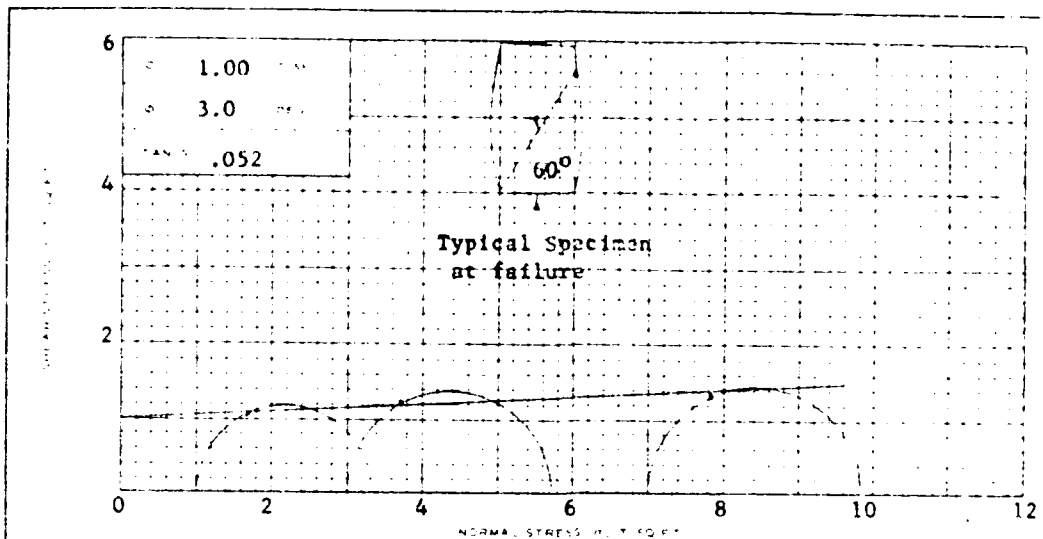
F/G 8/13

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



Gray and ten fat clay (CH) w/a little sand

54	21	33	2.66	TYPE OF SPECIMEN	Remolded	TYPE OF TEST	Q
1. See lab classification date on 217 form 7-77.				COOPER RIVER			
2 Max. std. compaction density = 101.3 pcf at opt. moist. content of 20.0%.				Area:	Powerhouse		
				Designation:	IT-2B-1	SAMPLE NO.	---
3 Specimen requested to be tested at 23.04 (3% above opt.) moist. content to 96.2 pcf (95% of max. std. compaction) dry density.				Size:	2.0' - 6.0'		
				Laboratory:	SADEN-L	DATE	27 Jan 1976
TRIAXIAL COMPRESSION TEST REPORT							

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

FILED SECTION IS OBSOLETE

TRANSLUCENT

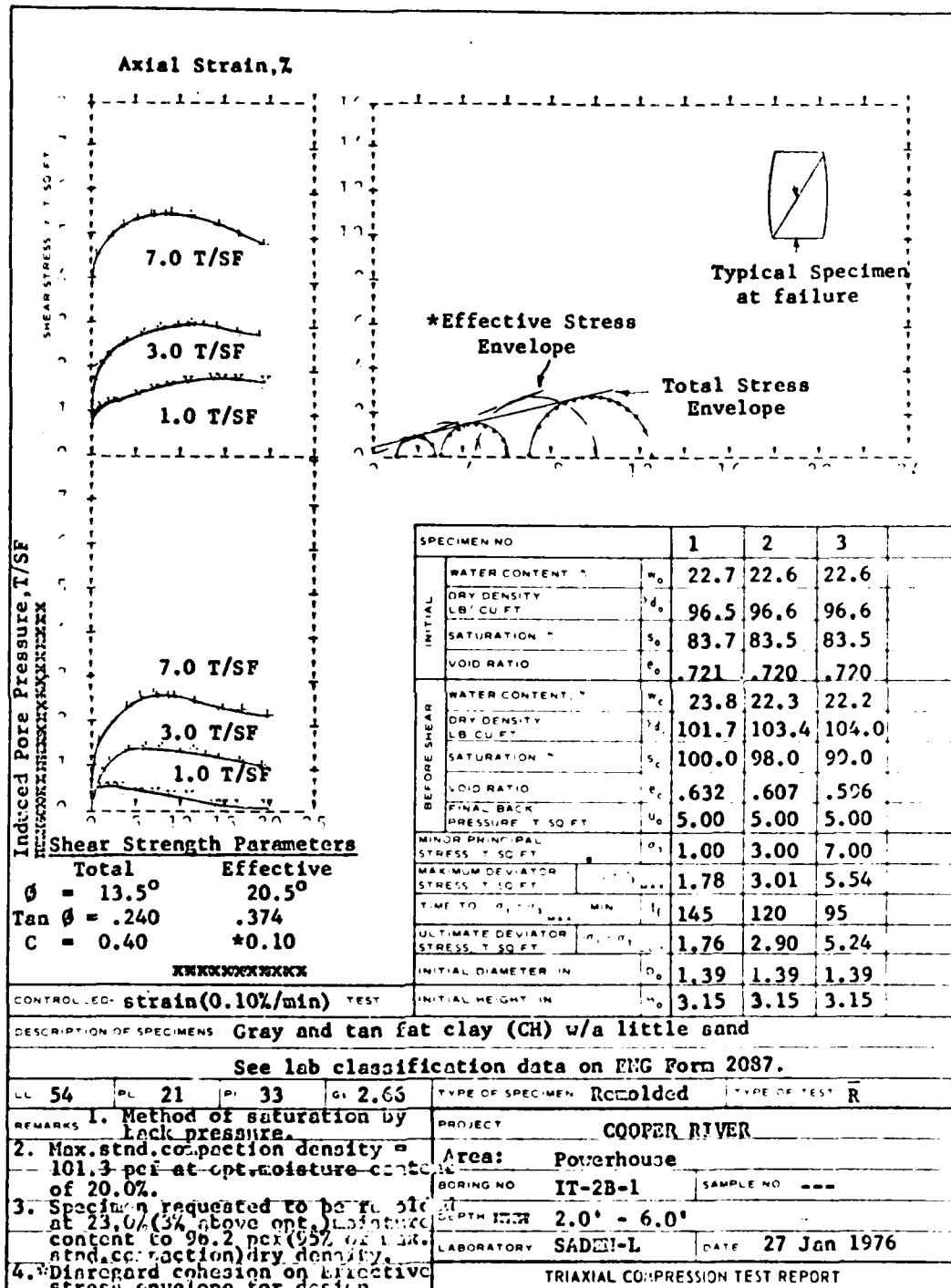
(FM 1110-2-1906)

Lab. No. 235/789

T-32⁺³

REQN. NO. NAPEN-76-2
W. O. NO. 9410

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DR., MARIETTA, GA. 30061



ENG FORM NO. 2089 PREVIOUS EDITION OBSOLETE TRANSLUCENT (EM 1110-2-1906)

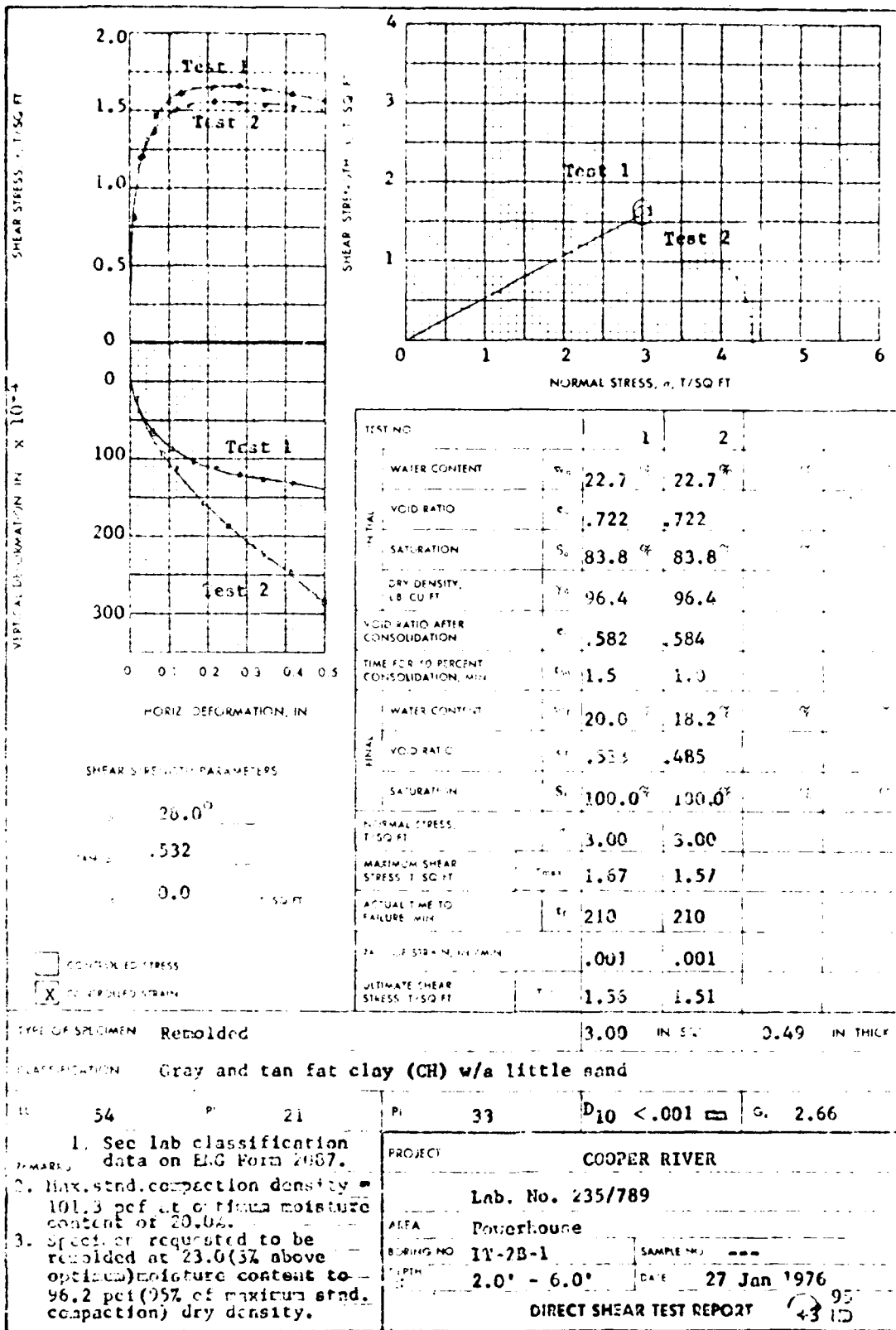
Local reproduction auth by DAEN-ASP-P, 26 Aug 1975.

Lab.No. 235/789

+3
T-33

WORK ORDER NO. 9410
RQ. NO. NAREN-76-2

DEPARTMENT OF THE ARMY, SOIL MECHANICS DIVISION, LABORATORY,
CORPS OF ENGINEERS, 511 SOUTH GARDEN DRIVE, FORT MONROE, VA. 22031



VISUAL CLASSIFICATIONS

INTAKE CHANNEL
COOPER RIVER REDIVERSION
ST. STEPHEN, S. CAROLINA
(CHARLESTON DISTRICT)

BORING IT-3A SAMPLE NO. 1 0.0'-5.0'

Gray wet silty fine SAND (SM)

BORING IT-13 SAMPLE NO. 1 0.0'-5.0'

Gray and light brown dry silty fine SAND (SM)

BORING IT-7 SAMPLE NO. 2 5.0'-9.0'

Brown dry clayey fine SAND (SC)

BORING IT-13 SAMPLE NO. 2 5.0'-9.0'

Light brown dry clayey fine SAND (SC)

BORING IT-21 SAMPLE NO. 3 10.0'-15.0'

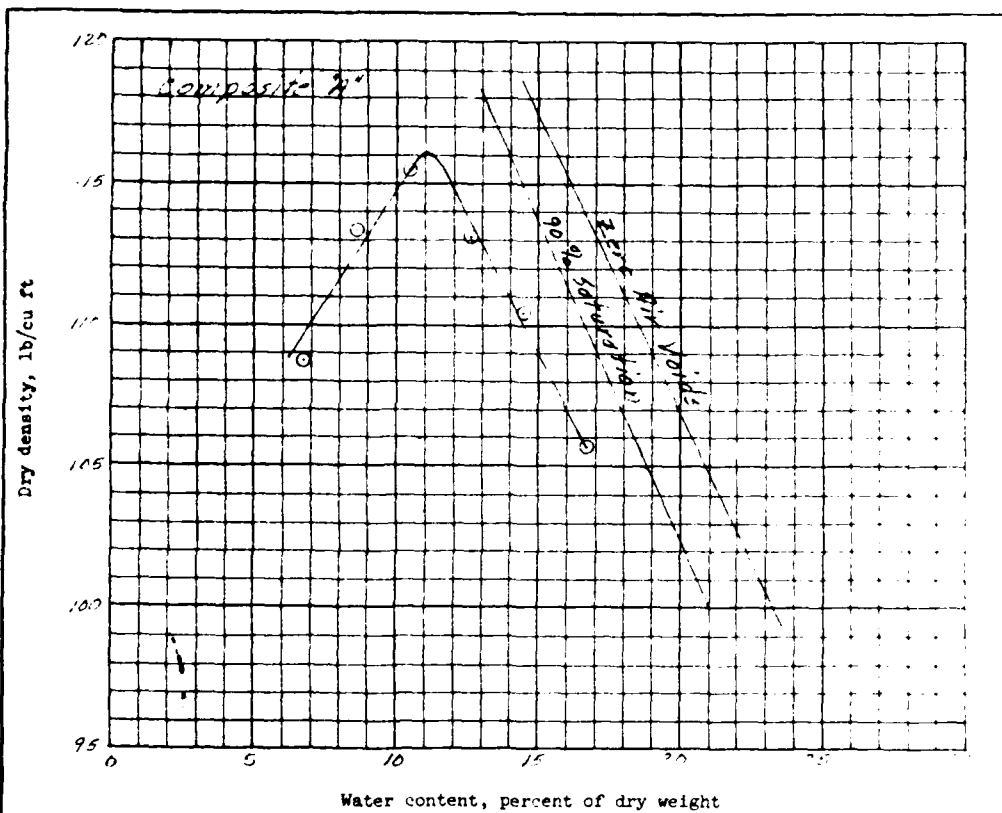
Light brown dry clayey fine SAND (SC)

BORING IT-27 SAMPLE NO. 2 3.0'-6.0'

Tan dry clayey fine SAND (SC)

Incl. 11

T-35



Standard compaction test
 25 blows per each of 3 layers, with 5.5 lb rammer and
 12 inch drop. 4 inch diameter mold

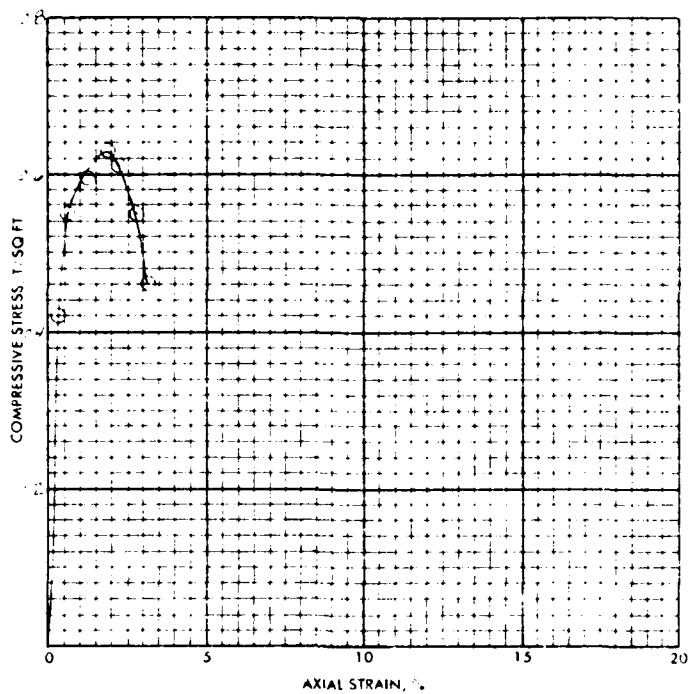
Sample No.	Elev or Depth	Classification	G	LL	PL	% > No. 4	% 3/4 in.
Composite A	0.0'-5.0'	silty fine SAND (SM)	2.62	NE	NP	0	0

Sample No.	Composite A		
Natural water content, percent			
Optimum water content, percent	11.0		
Max dry density, lb/cu ft	116.1		

Remarks * <i>Combined following</i>	Project <i>Cooper River Rediversion</i>	
<i>samples:</i>	<i>St. Stephen, S. Carolina</i>	
<i>IT-3A; Sample No. 1</i>	Area <i>INTAKE CHANNEL</i>	
<i>IT-13; Sample No. 1</i>	Boring No. <i>IT-3A</i> <i>IT-13</i>	Date <i>Novem. 2-4 1975</i>
	COMPACTION TEST REPORT	

COMPACTION TEST REPORT

FAILURE SKETCHES



CONTROLLED STRESS

CONTROLLED STRAIN

TEST NO.

TYPE OF SPECIMEN

WATER CONTENT

GRAVITY

SATURATION

DRY DENSITY, LB CU FT

TO, CUR MIN

UNCONFINED COMPRESSIVE STRENGTH, T SQ FT

UNDRAINED SHEAR STRENGTH, T SQ FT

POISSON'S RATIO

INITIAL SPECIMEN DIAMETER, IN

INITIAL SPECIMEN HEIGHT, IN

CLASSIFICATION

LL

PL

SH

NP

GP

MC

US

ML

CL

CH

PT

ST

MT

CT

PT

PROJECT

AREA

BORING NO

DEPTH

DATE

TEST NO

TEST NO

TEST NO

TEST NO

TEST NO

TEST NO

TEST NO

TEST NO

TEST NO

Cooper River Reversity

St Stephen, S. Carolina

INTAKE CHANNEL

IT-3A; IT-13

0.6' - 5.0'

December 1975

Composite "A"

Composite "A"

Composite "A"

Composite "A"

Composite "A"

Composite "A"

Composite "A"

Composite "A"

UNCONFINED COMPRESSION TEST REPORT

ENG FORM

1 JUN 65

3659

13-1111-1-1000

TRANSLUCENT

PLATE XI-2

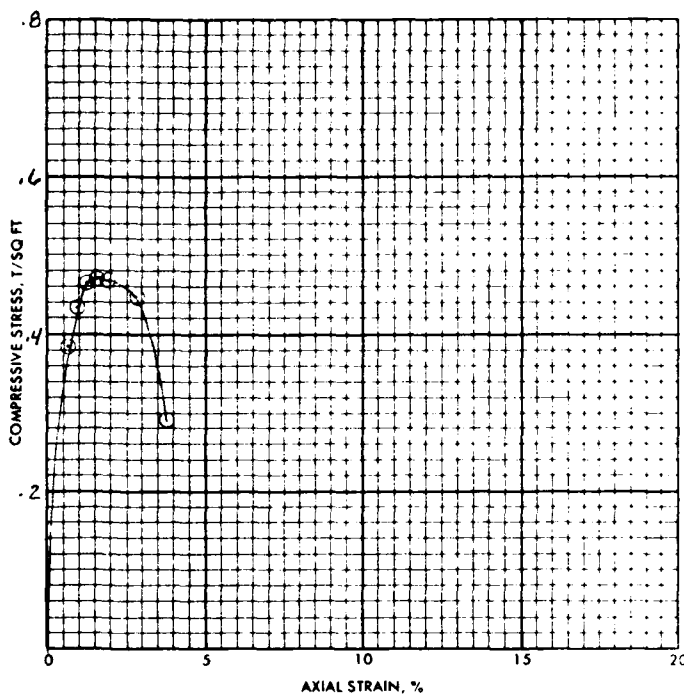
T-38

T-38

T-38

T-38

FAILURE SKETCHES



☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TEST NO.

1

TYPE OF SPECIMEN

Remolded

WATER CONTENT

w_u

12.5 %

VOID RATIO

e_u

0.488

SATURATION

S_u

67.2 %

DRY DENSITY, LB/CU FT

γ_d

109.9

TIME TO FAILURE, MIN

t_f

2

UNCONFINED COMPRESSIVE STRENGTH, T/SQ FT

q_u

0.47

UNDRAINED SHEAR STRENGTH, T/SQ FT

s_u

—

SENSITIVITY RATIO

S_i

—

INITIAL SPECIMEN DIAMETER, IN

D_u

1.42

INITIAL SPECIMEN HEIGHT, IN

H_u

3.12

CLASSIFICATION *silty fine SAND (SM)*

LL

NP

PL

NP

PI

NP

IG

2.62

REMARKS

Samples molded @ approx. moisture content of 13.0% (O.M.C. + 2%) and dry density of 110.3 Pcf. (95% max. density)

PROJECT

Cooper River Rediversion

AREA

St. Stephen, S. Carolina

BORING NO.

IT-3A & IT-13

SAMPLE NO

Composite A

DEPTH

0.0' - 5.0'

DATE

December, 1975

UNCONFINED COMPRESSION TEST REPORT

ENG FORM

3659

(EM 1110-2-1906)

1 JUN 65

(TRANSILUCENT)

GPO: 1966 O-274-946

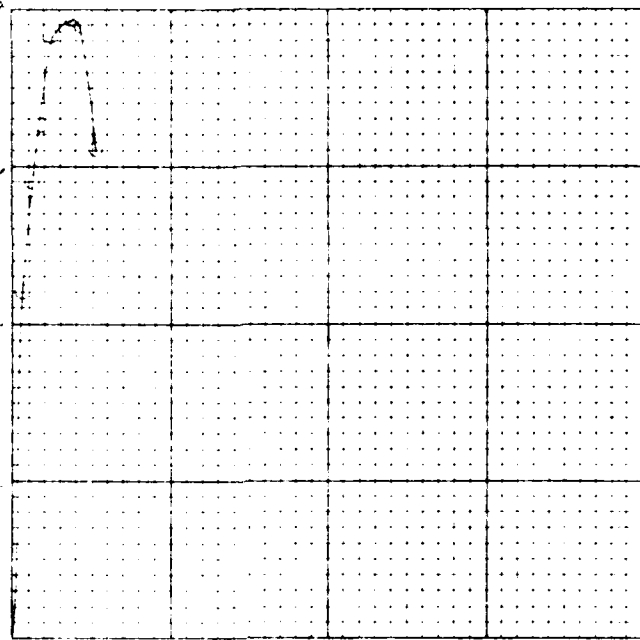
PLATE XI-2

T-39

T-38

FAILURE SKETCHES

COMPRESSION STRESS, T. SQ. FT.



AXIAL STRAIN, %

CONTROLLED STRESS

CONTROLLED STRAIN

TEST NO.

TYPE OF SPECIMEN

WATER CONTENT

INITIAL
SATURATION

DRI DENSITY, LB. CU. FT.

TIME TO FAILURE, MIN.

UNCONFINED COMPRESSIVE
STRENGTH, T. SQ. FT.

UNDRAINED SHEAR STRENGTH, T. SQ. FT.

SENSITIVITY RATIO

INITIAL SPECIMEN DIAMETER, IN.

INITIAL SPECIMEN HEIGHT, IN.

CLASSIFICATION *silt, fine SAND (EM)*

PL *NP*

PL *NP*

PL *NP*

G *2.62*

REMARKS: *Specimen 13
natural moisture content
of 11.2% (MC = 2%) 14.1
dry density of 110.3 pcf
(125% min. density)*

PROJECT

*Cooper River Rediversion
St. Stephens, S. Carolina*

AREA

INTAKE CHANNEL

BORING NO.

IT-3A, IT-13

SAMPLE NO.

Composite "A"

DEPTH

6.50'

DATE

December 1975

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

TRANSFERT

PLATE XI 2

T-40

PLATE XI 2

- 39

No. 1 No. 2 No. 3	
C 1.25 T/SF	
φ 28.75 DEG	
TAN φ 0.552	

SHEAR STRESS, τ , T/SQ FT

DEVIATOR STRESS, $\sigma_1 - \sigma_3$, T/SQ FT

SPECIMEN NO.				
INITIAL	WATER CONTENT %	w_0	10.4	10.4
	DRY DENSITY LB/CU FT	ρ_d	114.8	114.8
	SATURATION %	S_0	67.1	67.1
	VOID RATIO	e_0	0.462	0.462
BEFORE SHEAR	WATER CONTENT %	w_c		
	DRY DENSITY LB/CU FT	ρ_d		
	SATURATION %	S_c		
	VOID RATIO	e_c		
	FINAL BACK PRESSURE T/SQ FT	u_0		
MINOR PRINCIPAL STRESS T/SQ FT		σ_3	1.08	3.74
MAXIMUM DEVIATOR STRESS T/SQ FT		$\sigma_1 - \sigma_3$	2.68	4.22
TIME TO $\sigma_1 = \sigma_3$ MIN		t_1	2	7
ESTIMATE DEVIATOR STRESS T/SQ FT		$\sigma_1 - \sigma_3$	2.25*	7.22*
INITIAL DIAMETER IN		D_0	1.41	1.40
INITIAL HEIGHT IN		H_0	3.15	3.15

TEST	
TRIAXIAL COMPRESSION TEST REPORT	

REMARKS: * Stress is 15% strain. Sample no. 1 is approx. 100% saturation at 110% relative humidity at 100% relative humidity.	PROJECT: Cooper River, Charleston, S.C. BORING NO. IT-3A, IT-13 DEPTH: 0.0-5.0' LABORATORY: NED
--	--

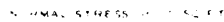
ENG. FORM NO. 2089
REV. 1-1-59

PREPARED BY: J. H. CONSOLE, JR.

TRANSLUCENT

CEM 1110-2-19061

T-41

[illegible]

1. The first step is to identify the problem. In this case, the problem is that the company is not meeting its sales targets. The second step is to analyze the data. The third step is to develop a plan. The fourth step is to implement the plan. The fifth step is to evaluate the results.

[illegible]

DATE RECEIVED	DATE OF TEST
10-1-56	2
NAME OF COMPANY THE IRON SHEDS COMPANY, INC. 1000 W. 1st Street, S.W. ALBUQUERQUE, N.M. 87102	
IDENTIFY IT-A1 IT-13	SAMPLE NO. Comp. to A
TESTED BY J. L. S.	
ANALYST NED	DATE COMPLETED 10-1-56


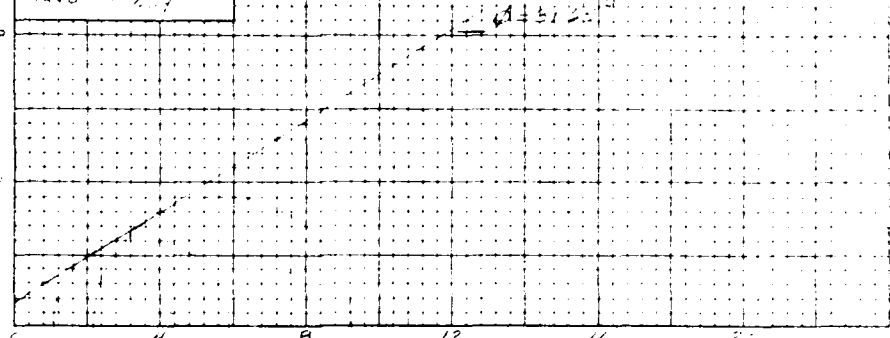
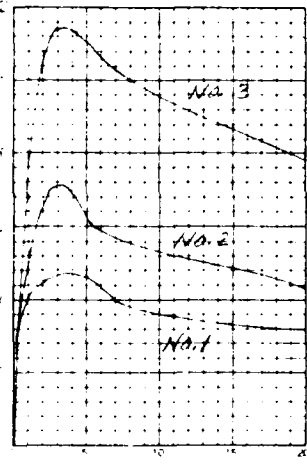
TRIAXIAL COMPRESSION TEST REPORT

145. NE 19. 1744 1745 1746 1747 1748 1749 1750 1751 1752 1753 1754 1755 1756 1757 1758 1759 1760 1761 1762 1763 1764 1765 1766 1767 1768 1769 1770 1771 1772 1773 1774 1775 1776 1777 1778 1779 1780 1781 1782 1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796 1797 1798 1799 1800 1801 1802 1803 1804 1805 1806 1807 1808 1809 1810 1811 1812 1813 1814 1815 1816 1817 1818 1819 1820 1821 1822 1823 1824 1825 1826 1827 1828 1829 1830 1831 1832 1833 1834 1835 1836 1837 1838 1839 1840 1841 1842 1843 1844 1845 1846 1847 1848 1849 1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2

TRANSITION:

FM 1110-2-1006

T-42

No. 1 No. 2 No. 3																																																																																			
C 1/2" T SP O 9/25 DEG TANG 0.007																																																																																			
SHEAR STRESS τ SO F																																																																																			
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DEVIATION STRESS σ_3 T SO F																																																																																			
AXIAL STRAIN %	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">SPECIMEN NO.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">BEFORE TEST</td> <td>WATER CONTENT %</td> <td>w_0</td> <td>47</td> <td>47</td> </tr> <tr> <td>DRY DENSITY LB CU FT</td> <td>ρ_d</td> <td>100</td> <td>100</td> <td>100</td> </tr> <tr> <td>SATURATION %</td> <td>s_0</td> <td>48</td> <td>47</td> <td>45</td> </tr> <tr> <td>VOID RATIO</td> <td>e_0</td> <td>1.48</td> <td>1.46</td> <td>1.44</td> </tr> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">AFTER TEST</td> <td>WATER CONTENT %</td> <td>w_c</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DRY DENSITY LB CU FT</td> <td>ρ_d</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SATURATION %</td> <td>s_c</td> <td></td> <td></td> <td></td> </tr> <tr> <td>VOID RATIO</td> <td>e_c</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">MINOR PRINCIPAL STRESS σ_3 T SO F</td> <td>σ_3</td> <td>1.0</td> <td>1.0</td> <td>1.0</td> </tr> <tr> <td colspan="2">MAXIMUM DEVIATOR STRESS $\sigma_1 - \sigma_3$ T SO F</td> <td>MAX</td> <td>4.4</td> <td>4.4</td> <td>4.4</td> </tr> <tr> <td colspan="2">MINIMUM DEVIATOR STRESS $\sigma_1 - \sigma_3$ T SO F</td> <td>MIN</td> <td>4</td> <td>4</td> <td>4</td> </tr> <tr> <td colspan="2">Y-MATE DEVIATOR STRESS $\sigma_1 - \sigma_3$ T SO F</td> <td>$\sigma_1 - \sigma_3$</td> <td>2.30</td> <td>2.24</td> <td>2.10</td> </tr> <tr> <td colspan="2">INITIAL DIAMETER IN</td> <td>D_0</td> <td>1.41</td> <td>1.42</td> <td>1.42</td> </tr> <tr> <td colspan="2">INITIAL HEIGHT IN</td> <td>H_0</td> <td>2.75</td> <td>2.75</td> <td>2.75</td> </tr> </table>	SPECIMEN NO.		1	2	3	BEFORE TEST	WATER CONTENT %	w_0	47	47	DRY DENSITY LB CU FT	ρ_d	100	100	100	SATURATION %	s_0	48	47	45	VOID RATIO	e_0	1.48	1.46	1.44	AFTER TEST	WATER CONTENT %	w_c				DRY DENSITY LB CU FT	ρ_d				SATURATION %	s_c				VOID RATIO	e_c				MINOR PRINCIPAL STRESS σ_3 T SO F		σ_3	1.0	1.0	1.0	MAXIMUM DEVIATOR STRESS $\sigma_1 - \sigma_3$ T SO F		MAX	4.4	4.4	4.4	MINIMUM DEVIATOR STRESS $\sigma_1 - \sigma_3$ T SO F		MIN	4	4	4	Y-MATE DEVIATOR STRESS $\sigma_1 - \sigma_3$ T SO F		$\sigma_1 - \sigma_3$	2.30	2.24	2.10	INITIAL DIAMETER IN		D_0	1.41	1.42	1.42	INITIAL HEIGHT IN		H_0	2.75	2.75	2.75
SPECIMEN NO.		1	2	3																																																																															
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DEVIATION STRESS <i>by fluid sand (FM)</i>																																																																																			
TYPE OF SPECIMEN <i>1.5 in. x 1.5 in. x 1.5 in.</i>																																																																																			
REMARKS <i>*Spec. 3 is 1/2 in. strain. Samples indicate a approx moisture content of 46 to 48. Spec. 1 and 2 by density of water.</i>	PROJECT <i>Intake Channel, 1/2 in. x 1.5 in. x 1.5 in.</i> REDUCED <i>Reduction, 1/2 in. x 1.5 in. x 1.5 in.</i> BORING NO. <i>IT-3A, IT-3</i> SAMPLE NO. <i>Comp. 1-1</i> DEPTH <i>1.5 in.</i> LABORATORY <i>NEO</i> DATE <i>December 1964</i>																																																																																		
TRIAXIAL COMPRESSION TEST REPORT																																																																																			

SPECIMEN NO.		1	2	3
WATER CONTENT %	w_0	16	10.8	11.1
DRY DENSITY LB/CU FT	γ_d	111	127.8	124
SATURATION %	s_0	14.1	17.4	80.0
VOL RATIO	e_0	0.428	0.456	0.481
WATER CONTENT %	w_c	19.6	18.8	9.2
DRY DENSITY LB/CU FT	γ_d	107.1	101.6	109.6
SATURATION %	s_c	100	100	100
VOL RATIO	e_c	0.418	0.471	0.472
FINAL BACK PRESSURE T/SQ FT	u_0	7.7	9.60	9.30
MINOR PRINCIPAL STRESS T/SQ FT	σ_3	5.8	5.16	4.32
MAXIMUM DEVIATOR STRESS T/SQ FT	$\sigma_1 - \sigma_3$	10.50	13.82	15.76
TIME TO $\sigma_1 = \sigma_3$ MIN	t_1	48	52	65
ULTIMATE DEVIATOR STRESS T/SQ FT	$\sigma_1 - \sigma_3$	190*	1176*	142*
INITIAL DIAMETER IN	d_0	1.42	1.42	1.42
INITIAL HEIGHT IN	h_0	3.15	3.10	3.15

CONFINING PRESSURE		TEST
1	5.8	1
2	5.16	2
3	4.32	3

REMARKS		DATE OF TEST
<p>1. Sample is 100% air dried.</p> <p>2. Sample is 100% air dried.</p> <p>3. Sample is 100% air dried.</p> <p>4. Sample is 100% air dried.</p> <p>5. Sample is 100% air dried.</p>		<p>10/10/61</p>

PROJECT		DATE OF TEST
<p>1. Project is 100% air dried.</p> <p>2. Project is 100% air dried.</p> <p>3. Project is 100% air dried.</p> <p>4. Project is 100% air dried.</p> <p>5. Project is 100% air dried.</p>		<p>10/10/61</p>

TRIAXIAL COMPRESSION TEST REPORT	
<p>1. Project is 100% air dried.</p> <p>2. Project is 100% air dried.</p> <p>3. Project is 100% air dried.</p> <p>4. Project is 100% air dried.</p> <p>5. Project is 100% air dried.</p>	

ENG FORM NO. 2084
REV. JUNE 1970

TRANSCENT

(EM 1110-2-1906)

T-44

43

<p>$c' = 0.0$ T/SF</p> <p>$\phi' = 4.54$ DEG</p> <p>$\tan \phi' = 0.68$</p>	
<p>Effective Shear Stress, τ, T/SF</p>	<p>Effective Normal Stress, σ, T/SF</p>

<p>Vertical Stress, σ_v, T/SF</p> <p>Deviator Stress, $\sigma_d - \sigma_3$, T/SF</p>	
<p>Axial Strain, ϵ, %</p>	<p>Specimen No. 1</p>

<p>CONTROLLED: <u>STRAIN</u> TEST</p>	<p>DESCRIPTION OF SPECIMENS: <u>Silty fine sand (SM)</u></p>
<p>LL <u>NP</u> PL <u>NP</u> PI <u>NP</u> GI <u>2.62</u></p>	<p>TYPE OF SPECIMEN: <u>Remolded</u> TYPE OF TEST: <u>R</u></p>
<p>REMARKS: <u>* Pore Pressure & some σ_3</u></p> <p><u>Strain: 12 Major and Minor</u></p> <p><u>Principal stresses:</u></p> <p><u>See sheet 1012 for</u></p> <p><u>additional information</u></p>	<p>PROJECT: <u>Intake Channel, Cooper River</u></p> <p><u>Rediversion, St. Stephen, S. Carolina</u></p> <p>BORING NO: <u>IT-34 & IT-13</u> SAMPLE NO: <u>Composite #1</u></p> <p>DEPTH: <u>0.0 - 5.6'</u></p> <p>LABORATORY: <u>NED</u> DATE: <u>December 1975</u></p>

TRIAXIAL COMPRESSION TEST REPORT

ENG FORM NO
RE 7 JUNE 1970

2089

PREVIOUS EDITION IS OBSOLETE

TRANSLUCENT

(EM 1110-2-1906)

T-45 T 44

No. 1 No. 2 No. 3

C	
ϕ	
TAN ϕ	

Graph of Shear Stress (T) vs Normal Stress (sigma) in T SQ FT.

Graph of Deviator Stress (sigma1 - sigma3) vs Axial Strain (epsilon) in T SQ FT.

SPECIMEN NO.		1	2	3
INITIAL	WATER CONTENT %	12.9	13.1	13.2
	DRY DENSITY LB/ CU FT	97.8	101	109.6
	SATURATION %	67.0	72.7	70.2
	VOID RATIO	0.469	0.471	0.492
BEFORE SHEAR	WATER CONTENT %	20.5	19.2	20.8
	DRY DENSITY LB/ CU FT	91.3	106.8	105.7
	SATURATION %	100	100	100
	VOID RATIO	0.554	0.503	0.546
FINAL BACK PRESSURE T SQ FT		7.20	7.20	7.20
MINOR PRINCIPAL STRESS T SQ FT		1.08	2.16	4.32
MAXIMUM DEVIATOR STRESS T SQ FT		2.4*	12.79	12.77
TIME TO $\sigma_1 = \sigma_3$ MAX. MIN		90	23	44
ULTIMATE DEVIATOR STRESS T SQ FT		—	12.46*	10.11*
INITIAL DIAMETER IN		1.42	1.40	1.40
INITIAL HEIGHT IN		3.18	3.15	3.19

CONTROLLED: strain TEST

DESCRIPTION OF SPECIMENS: silty fine sand (SM)

LL 54	PL 14	PI 14	LI 2.22	TYPE OF SPECIMEN <u>Unconsolidated</u>	TYPE OF TEST <u>R</u>
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REMARKS: Specimen 2 is peak strain.
Specimen 1 is approx. 3% approx.
ultimate deviator stress of 13% (0.11).
+ 2.42 (0.11) (0.11) (0.11) (0.11)
116.2 (0.11) (0.11) (0.11) (0.11)
Specimen 2 is 2.22

PROJECT <u>Intake channel, Cooper River</u>	
LOCATION <u>Red Bluff, St. Stephen, S. Carolina</u>	
BORING NO. <u>IT-3A, IT-13</u>	SAMPLE NO. <u>Composite "A"</u>
DEPTH <u>0.0' to 1.0'</u>	
APPROVED BY <u>NEL</u>	DATE <u>December 1975</u>

TRIAXIAL COMPRESSION TEST REPORT

ENG FORM NO. 2089
REV. JUNE 1970

PREVIOUS EDITION OBSOLETE

TRANSLUCENT

(EM 1110-2-1906)

T-46 T-45

<p>$C = 2$ T.SF</p> <p>$\phi = 32.45^\circ$ DEG</p> <p>$TAN \phi = 0.646$</p>																																																																																																										
<p>$\sigma_1 = 10.9$ T.S.F.</p> <p>$\sigma_2 = 0$ T.S.F.</p> <p>$\sigma_3 = 0$ T.S.F.</p>																																																																																																										
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<p>CONTROLLED BY <u>strain</u> TEST</p> <p>DESCRIPTION OF SPECIMENS <u>SH-1 FINE SAND (SN)</u></p> <p>CC <u>NA</u> PL <u>NA</u> PL <u>IP</u> <u>5.2 62</u> TYPE OF SPECIMEN <u>Triaxial</u> TYPE OF TEST <u>C</u></p>																																																																																																										
<p>REMARKS * <u>Large Pressure & Sample</u></p> <p><u>No. 1 strain to Max.</u></p> <p><u>and Minor Principal Stress</u></p> <p><u>See next test for</u></p> <p><u>additional information</u></p>	<p>PROJECT <u>Int. to Channel</u></p> <p><u>Ref. to Int. to Channel</u></p> <p>BLIND NO. <u>2734</u> ST. <u>13</u> SAMPLE NO. <u>500</u></p> <p>DEPTH <u>6.5</u></p> <p>LABORATORY <u>NEO</u> DATE <u>Dec. 11, 1953</u></p>																																																																																																									

ENG. FORM NO. 2089
REV. JUNE 1950

PREVIOUS EDITION IS OBSOLETE

TRANSLUCENT

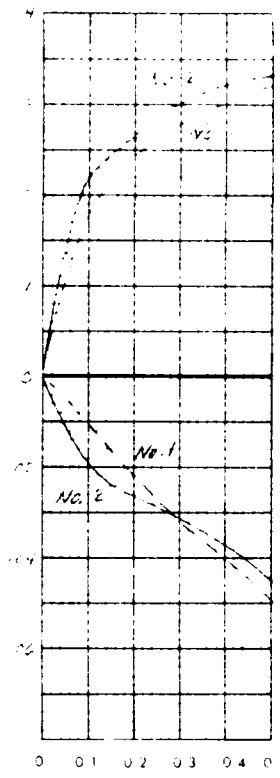
(EM 1110-2-1906)

T-47

T-47

SHEAR STRESS, T, SQ. FT.

VERTICAL DEFORMATION, IN.



SHEAR STRENGTH PARAMETERS

33.7°

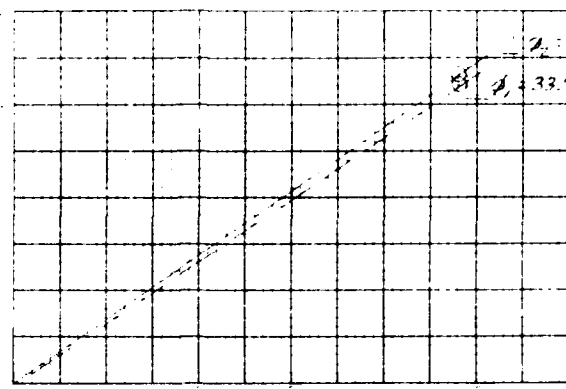
C 66.7

6.0

T, SQ. FT.

- ☐ CONTROLLED STRESS
☒ CONTROLLED STRAIN

SHEAR STRENGTH, T, SQ. FT.



NORMAL STRESS, T, SQ. FT.

TEST NO.			
WATER CONTENT	W	11.8%	12.8%
VOID RATIO	e	0.48	0.48
SATURATION	S	58.7%	58.7%
DRY DENSITY	γ _d	1.14	1.14
VOID RATIO AFTER CONSOLIDATION	e	0.376	0.40
TIME FOR 50 PERCENT CONSOLIDATION, MIN.	t ₅₀	2.5	2.4
WATER CONTENT	W	12.0%	12.4%
VOID RATIO	e	0.424	0.44
SATURATION	S	100%	100%
NORMAL STRESS, T, SQ. FT.	σ	4.80	4.80
MAXIMUM SHEAR STRESS, T, SQ. FT.	τ _{max}	3.01*	3.13*
ACTUAL TIME TO FAILURE, MIN.	t	60	60
RATE OF STRAIN, IN./MIN.		0.003	0.003
ULTIMATE SHEAR STRESS, T, SQ. FT.		-	-

TYPE OF SPECIMEN: 3.14 IN. DIAM. 1.5 IN. THICK

CLASSIFICATION: 3.14 FINE SAND (S.M.)

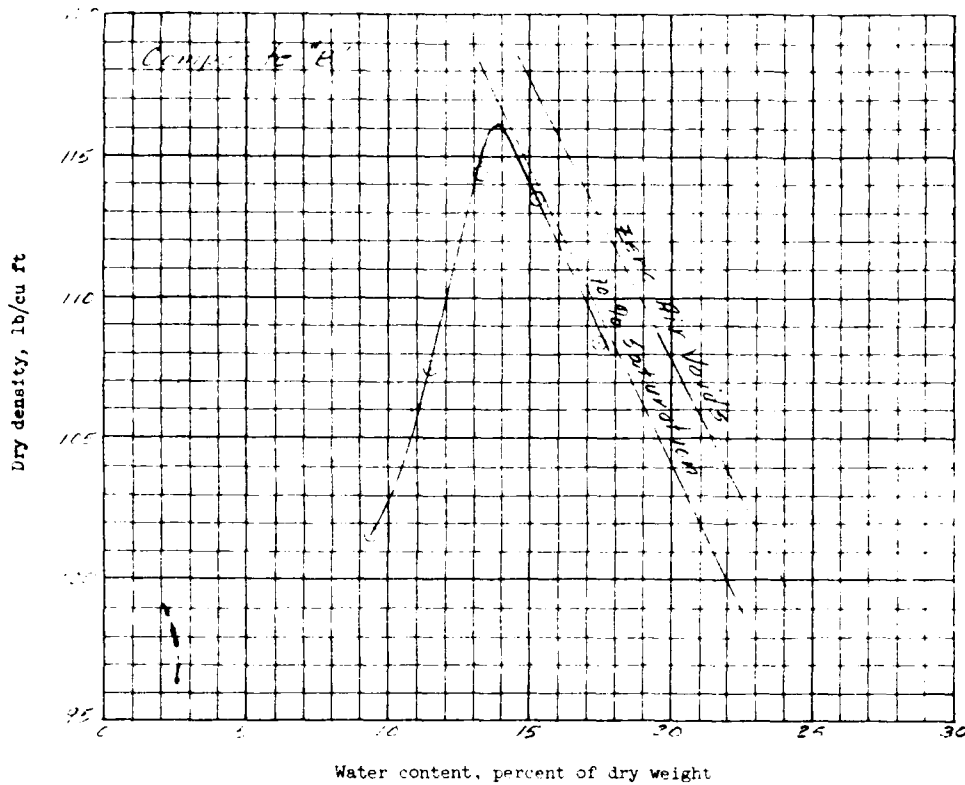
LL: 1.2 PL: 1.2 PI: 1.2 G: 2.62

REMARKS: Sample marked 13312

moisture content of 11.8%
 to find the dry density of
 1.14 g/cm³
 45%

PROJECT: 2.0 per cent. saturation
 AREA: 2.0 per cent. saturation
 BORING NO.: 17.44/17-13 SAMPLE NO.: 13312
 DATE: November, 1955

DIRECT SHEAR TEST REPORT



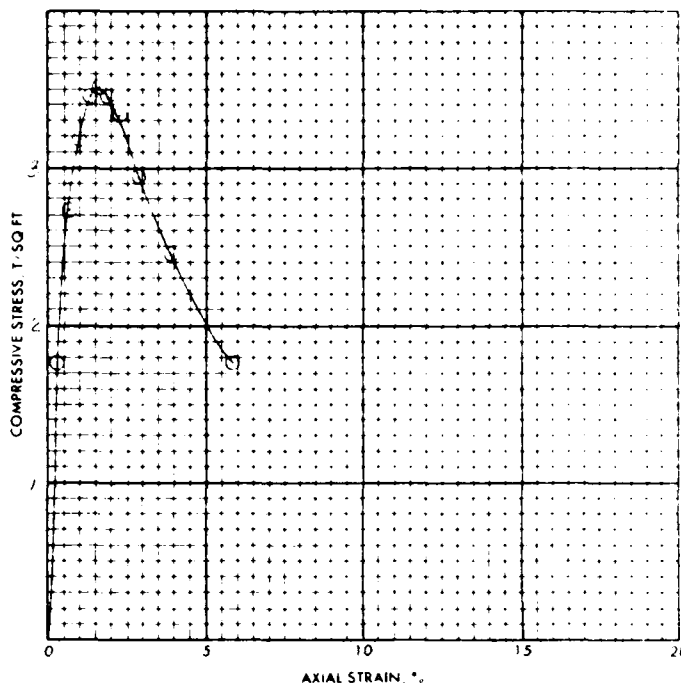
5401-2012 compaction test
 25 blows per each of 3 layers, with 5.5 lb rammer and
 12 inch drop. 4 inch diameter mold

Sample No.	Elev or Depth	Classification	G	LL	PL	% > No. 4	% > 3/4 in.
Composite 1-8	2.0-15.0	clayey fine sand (SC)	263	28	16	0	0

Sample No.	Composite 1-8
Natural water content, percent	
Optimum water content, percent	13.9
Max dry density, lb/cu ft	116.1

Remarks * Composite following samples:	Project Cooper River Rediversion
IT-7, Sample No. 1	St. Stephen, S. 3rd line
IT-13, Sample No. 2	Area ITHANE CHANNEL
IT-21, Sample No. 3	Boring No. IT-7, IT-13, IT-21, IT-27
IT-27, Sample No. 4	Date November, 1955
COMPACTION TEST REPORT	

FAILURE SKETCHES



☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TEST NO.

TYPE OF SPECIMEN

Remolded

WATER CONTENT

12.7

VOID RATIO

0.482

SATURATION

74.7

DRY DENSITY, LB/CU FT

110.7

TIME TO FAILURE, MIN

1.5

UNCONFINED COMPRESSIVE STRENGTH, T/SQ FT

3.51

UNDRAINED SHEAR STRENGTH, T/SQ FT

—

SENSITIVITY RATIO

—

INITIAL SPECIMEN DIAMETER, IN

3.60

INITIAL SPECIMEN HEIGHT, IN

3.15

CLASSIFICATION *Clayey Fine SAND (SC)*

LL

28

PL

16

PI

12

REMARKS

*2 samples remolded
@ approx. moisture content
of 12.7% (e.m.s.) and dry
density of 110.2 Pcf (95%
max. density)*

PROJECT

*Cooper River Rehabilitation
St. 54+00 to 54+100*

AREA

ENTHREE CHANNEL

BORING NO.

IT-2, 3, 4, 5

SAMPLE NO.

Composite E

DEPTH

3 to 15 ft

DATE

Nov. 10, 1964

UNCONFINED COMPRESSION TEST REPORT

ENG FORM
1 JUN 65

3659

(F.M. 1110-2-1006)

GRAPHIC

PLATE

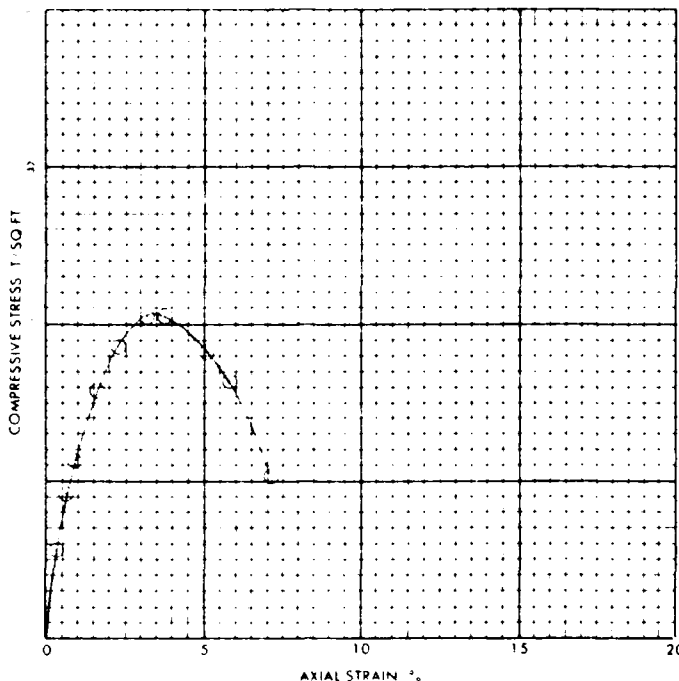
T-51

FAILURE SKETCHES



CONTROLLED STRESS

CONTROLLED STRAIN



TEST NO

TYPE OF SPECIMEN

WATER CONTENT

VOID RATIO

SATURATION

DRY DENSITY LB CU FT

TIME TO FAILURE MIN

UNCONFINED COMPRESSIVE STRENGTH T SQ FT

UNDRAINED SHEAR STRENGTH, T SQ FT

SENSITIVITY RATIO

INITIAL SPECIMEN DIAMETER, IN

INITIAL SPECIMEN HEIGHT, IN

CLASSIFICATION *Clayey Fine Sand (SC)*

LL *28*

PL *16*

PI *12*

G *2.68*

REMARKS *Sample remolded
3 approx. moisture content
of 25% (110.3 p.c. + 20% in 1
dry density of 110.3 p.c.
(95% max. density)*

PROJECT *Cooper River Retention*

AREA *St. Stephen, S. Carolina*

BORING NO *INTAKE TUNNEL*

DEPTH *17, 18, 19*

SAMPLE NO *Composite "B"*

DATE *November 1975*

UNCONFINED COMPRESSION TEST REPORT

ENG FORM

1 JUN 65

3659

100-10-1-1000

TRANSMITT

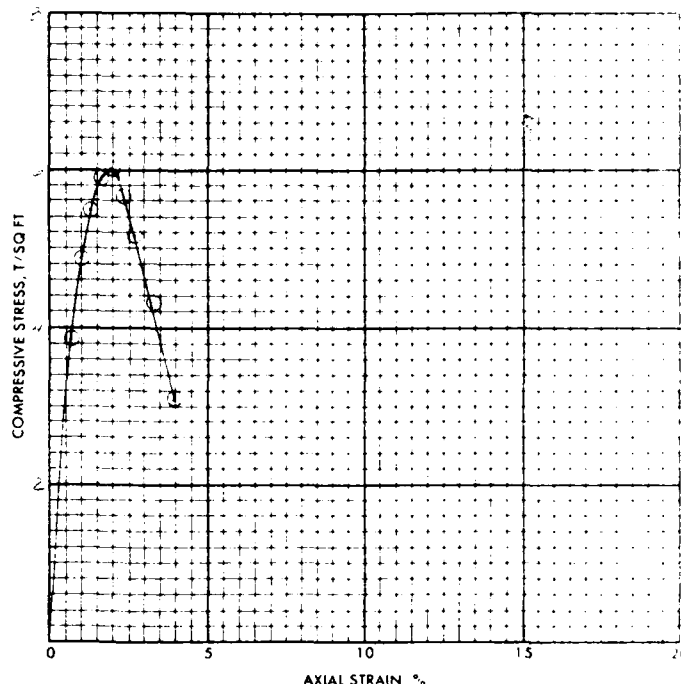
100-10-1-1000

PLATE XI 2

T52

T-51

FAILURE SKETCHES



☐ CONTROLLED STRESS
☒ CONTROLLED STRAIN

TEST NO

TYPE OF SPECIMEN

WATER CONTENT

VOID RATIO

SATURATION

DRY DENSITY, LB/CU FT

TIME TO FAILURE, MIN

UNCONFINED COMPRESSIVE
STRENGTH, T/SQ FT

UNDRAINED SHEAR STRENGTH, T/SQ FT

SENSITIVITY RATIO

INITIAL SPECIMEN DIAMETER, IN

INITIAL SPECIMEN HEIGHT, IN

CLASSIFICATION

LL

REMARKS

Remolded
upper moisture content
of 11.8% (comp. - 2%) and
dry density of 110.2 Pcf.
20% max. density

PROJECT

AREA

BORING NO

DEPTH

Cooper River Bridge

St. Stephen, S. Carolina

INTAKE CHANNEL

IT 1, 2, 21, 27

30-15

SAMPLE NO

DATE

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

TRANSMITT

T-53

TRANSICENT (FM 1110-2-1906)

T-54 T-53

<p style="text-align: center;">SHEAR STRESS (lb/sq ft)</p>	<p style="text-align: center;">DEVIATOR STRESS (lb/sq ft)</p>																																																																
<p style="margin: 0;">NORMAL STRESS (lb/sq ft)</p> <p style="margin: 0;">AXIAL STRAIN (%)</p>																																																																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">SPECIMEN 1</th> <th>1</th> <th>2</th> </tr> <tr> <td>WATER CONTENT %</td> <td>w_0</td> <td>11.3</td> <td>11.3</td> </tr> <tr> <td>DRY DENSITY (lb/cu ft)</td> <td>ρ_d</td> <td>1.22</td> <td>1.22</td> </tr> <tr> <td>SATURATION %</td> <td>S_0</td> <td>64.1</td> <td>64.1</td> </tr> <tr> <td>VOID RATIO</td> <td>e_0</td> <td>1.42</td> <td>1.42</td> </tr> <tr> <td colspan="2">WATER CONTENT %</td> <td>w_c</td> <td></td> </tr> <tr> <td colspan="2">DRY DENSITY (lb/cu ft)</td> <td>ρ_d</td> <td></td> </tr> <tr> <td colspan="2">SATURATION %</td> <td>S_0</td> <td></td> </tr> <tr> <td colspan="2">VOID RATIO</td> <td>e_0</td> <td></td> </tr> <tr> <td colspan="2">INITIAL BACK PRESSURE (lb/sq ft)</td> <td>u_0</td> <td></td> </tr> <tr> <td colspan="2">MINOR PRINCIPAL STRESS (lb/sq ft)</td> <td>σ_3</td> <td>1.08</td> </tr> <tr> <td colspan="2">MAXIMUM PRINCIPAL STRESS (lb/sq ft)</td> <td>σ_1</td> <td>11.50*</td> </tr> <tr> <td colspan="2">TIME (min)</td> <td>t</td> <td>14</td> </tr> <tr> <td colspan="2">ULTIMATE DEVIATOR STRESS (lb/sq ft)</td> <td>$\sigma_1 - \sigma_3$</td> <td>6.90*</td> </tr> <tr> <td colspan="2">INITIAL DIAMETER (in)</td> <td>D_0</td> <td>1.42</td> </tr> <tr> <td colspan="2">INITIAL HEIGHT (in)</td> <td>H_0</td> <td>3.15</td> </tr> </table>		SPECIMEN 1		1	2	WATER CONTENT %	w_0	11.3	11.3	DRY DENSITY (lb/cu ft)	ρ_d	1.22	1.22	SATURATION %	S_0	64.1	64.1	VOID RATIO	e_0	1.42	1.42	WATER CONTENT %		w_c		DRY DENSITY (lb/cu ft)		ρ_d		SATURATION %		S_0		VOID RATIO		e_0		INITIAL BACK PRESSURE (lb/sq ft)		u_0		MINOR PRINCIPAL STRESS (lb/sq ft)		σ_3	1.08	MAXIMUM PRINCIPAL STRESS (lb/sq ft)		σ_1	11.50*	TIME (min)		t	14	ULTIMATE DEVIATOR STRESS (lb/sq ft)		$\sigma_1 - \sigma_3$	6.90*	INITIAL DIAMETER (in)		D_0	1.42	INITIAL HEIGHT (in)		H_0	3.15
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<p>CONTROLLED: <i>Handwritten</i> TEST</p> <p>ES. PORTION OF SPECIMEN: <i>Handwritten</i></p>																																																																	
<p>REMARKS: <i>Handwritten</i></p>																																																																	
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<p>TEST NO.: <i>Handwritten</i> SAMPLE NO.: <i>Handwritten</i></p>																																																																	
<p>DATE: <i>Handwritten</i></p>																																																																	

T-56-55

Sheet 1 of 2

$c' = 0.0$ T SF
 $\phi' = 32.81$ DEG
 $\tan \phi' = 0.645$

SPECIMEN NO		1	2	3	
INITIAL	WATER CONTENT, %	w_0			
	DRY DENSITY, LB/CU FT	γ_{d0}			
	SATURATION, %	s_0			
	VOID RATIO	e_0			
BEFORE SHEAR	WATER CONTENT, %	w_c			
	DRY DENSITY, LB/CU FT	γ_{dc}			
	SATURATION, %	s_c			
	VOID RATIO	e_c			
FINAL BACK PRESSURE, T/SQ FT		u_0			
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	0.64	0.97	1.61
MAXIMUM DEVIATOR STRESS, T/SQ FT		$\sigma_1 - \sigma_3$			
TIME TO $\sigma_1 - \sigma_3$ MAX, MIN		t_1			
ULTIMATE DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$			
MOH. FAILURE STRESS, T/SF		τ_f	2.18	3.33	5.61
PORE PRESSURE, T/SF		u	+0.44*	+1.19*	+2.65*

CONTROLLED- strain TEST

DESCRIPTION OF SPECIMENS clayey fine SAND (SC)

LC 28	PL 16	PI 12	SI 63	TYPE OF SPECIMEN <u>Remolded</u>	TYPE OF TEST <u>K</u>
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REMARKS: *Pore Pressure 2. times σ_3 axial strain 4. No. 8 Minor Pore Pressures.

Samples remolded & compacted.

moisture content of 12.5 to 16.0 %

dry density of No. 3 test 95% max density

PROJECT <u>Intake Channel, Cooper River</u>	
<u>Rediversion, St. Stephens, S. Carolina</u>	
BORING NO <u>IT-7, 13, 21, 27</u>	SAMPLE NO <u>Composite "B"</u>
DEPTH <u>3.0' - 15.0'</u>	
LABORATORY <u>NED</u>	DATE <u>November 1975</u>

TRIAXIAL COMPRESSION TEST REPORT

<p>C = 3.0 T/SF</p> <p>$\phi = 15^\circ$ DEG</p> <p>TAN $\phi = 0.267$</p>	<p>NO. 1 NO. 2 NO. 3</p>
--	--------------------------

SHEAR STRESS, τ , T/SQ FT

NORMAL STRESS, σ , T/SQ FT

DEVIATOR STRESS, $\sigma_1 - \sigma_3$, T/SQ FT

AXIAL STRAIN, %

SPECIMEN NO.		1	2	3
INITIAL	WATER CONTENT, %	$w_o = 18.3$	18.1	16.5
	DRY DENSITY, LB/ CU FT	$\gamma_d = 110.1$	110.2	110.2
	SATURATION, %	$S_o = 85.1$	85.0	84.6
	VOID RATIO	$e_o = 1.472$	1.476	1.470
BEFORE SHEAR	WATER CONTENT, %	$w_c = 21.5$	21.7	20.2
	DRY DENSITY, LB/ CU FT	$\gamma_d = 104.6$	105.3	107.6
	SATURATION, %	$S_c = 100$	100	100
	VOID RATIO	$e_c = 1.521$	1.529	1.551
FINAL BACK PRESSURE, T/SQ FT		$u_o = 10.0$	9.0	9.0
MINOR PRINCIPAL STRESS, T/SQ FT		$\sigma_3 = 1.42$	1.47	1.42
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX} = 1.52$	2.11	3.12
TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN		$t_f = 20$	15	15
ULTIMATE DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{ULT} = -$	-	3.22
INITIAL DIAMETER, IN		$D_o = 1.42$	1.47	1.42
INITIAL HEIGHT, IN		$H_o = 3.16$	3.15	3.12

CONTROLLED: $\sigma_3 = 10.0$ TEST

DESCRIPTION OF SPECIMENS: *clayey fine SAND (SC)*

LL 42	PL 16	PI 17	GI 2.02	TYPE OF SPECIMEN: <i>1.5 in. dia.</i>	TYPE OF TEST: <i>AC</i>
-------	-------	-------	---------	---------------------------------------	-------------------------

REMARKS: ** Shear in compression*
2 in. dia. test specimen
moisture content of 18.1%
compacted at 95% density
100% (20% dry density)

PROJECT: *Interchange, South*

LOCATION: *St. Louis - Springfield*

BORING NO: *ET-7, 13, 21, 27* SAMPLE NO: *SC-100-1*

DEPTH: *10.0* FEET

LABORATORY: *NEL* DATE: *April 11, 1962*

ENG FORM NO. 2089
REV. JUNE 1970

PREVIOUS EDITION IS OBSOLETE

TRANSLUCENT

(EM 1110-2-1906)

T-59 1-58

<p style="text-align: center;">C 0.0 T SF</p> <p style="text-align: center;">φ 2.2 DEG</p> <p style="text-align: center;">TAN φ 0.40</p>																					
<p style="text-align: center;">3</p> <p style="text-align: center;">2</p> <p style="text-align: center;">1</p> <p style="text-align: center;">0</p>	<p style="text-align: center;">15</p> <p style="text-align: center;">10</p> <p style="text-align: center;">5</p> <p style="text-align: center;">0</p>																				
<p style="text-align: center;">3</p> <p style="text-align: center;">2</p> <p style="text-align: center;">1</p> <p style="text-align: center;">0</p>	<p style="text-align: center;">15</p> <p style="text-align: center;">10</p> <p style="text-align: center;">5</p> <p style="text-align: center;">0</p>																				
<p style="text-align: center;">AXIAL STRAIN %</p>																					
<p>CONTROLLED: <i>strain</i> TEST</p>																					
<p>DESCRIPTION OF SPECIMENS: <i>clayey fine SAND (SC)</i></p>																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>LL %</td> <td>PL %</td> <td>FI</td> <td>LI</td> <td>CI</td> <td>UC</td> <td>TYPE OF SPECIMEN</td> <td>TYPE OF TEST</td> </tr> <tr> <td>42</td> <td>16</td> <td>11</td> <td>2.63</td> <td></td> <td></td> <td><i>Pencil</i></td> <td><i>R</i></td> </tr> </table>		LL %	PL %	FI	LI	CI	UC	TYPE OF SPECIMEN	TYPE OF TEST	42	16	11	2.63			<i>Pencil</i>	<i>R</i>				
LL %	PL %	FI	LI	CI	UC	TYPE OF SPECIMEN	TYPE OF TEST														
42	16	11	2.63			<i>Pencil</i>	<i>R</i>														
<p>REMARKS: <i>* For pressure 2000 lb/in.², strain as 10% (100 lb/in.²) for 100 lb/in.²</i></p> <p><i>Samples removed at 2.4% strain, 100 lb/in.²</i></p> <p><i>content of 10.2 for 100 lb/in.²</i></p> <p><i>Density</i></p>																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>PROJECT</td> <td colspan="3"><i>Intake Channel, Cooper River</i></td> </tr> <tr> <td>LOCATION</td> <td colspan="3"><i>Red River, S. Carolina</i></td> </tr> <tr> <td>BORING NO.</td> <td><i>ET 2, 13, 21, 27</i></td> <td>SAMPLE NO.</td> <td><i>Composite "B"</i></td> </tr> <tr> <td>DEPTH</td> <td><i>3.2' - 15.6'</i></td> <td>LABORATORY</td> <td><i>NED</i></td> </tr> <tr> <td>DATE</td> <td colspan="3"><i>November 1975</i></td> </tr> </table>		PROJECT	<i>Intake Channel, Cooper River</i>			LOCATION	<i>Red River, S. Carolina</i>			BORING NO.	<i>ET 2, 13, 21, 27</i>	SAMPLE NO.	<i>Composite "B"</i>	DEPTH	<i>3.2' - 15.6'</i>	LABORATORY	<i>NED</i>	DATE	<i>November 1975</i>		
PROJECT	<i>Intake Channel, Cooper River</i>																				
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DATE	<i>November 1975</i>																				
<p>TRIAXIAL COMPRESSION TEST REPORT</p>																					

T-60 - 59

SHEAR STRESS, σ , T/SQ FT

HORIZ. DEFORMATION, IN

VERTICAL DEFORMATION, IN

SHEAR STRENGTH, s , T/SQ FT

NORMAL STRESS, σ , T/SQ FT

SHEAR STRENGTH PARAMETERS

$\phi = 34.8^\circ$

C = 0.594 T/SQ FT

C = 0.5 T/SQ FT

☐ CONTROLLED STRESS
 ☒ CONTROLLED STRAIN

TEST NO		1	2
INITIAL	WATER CONTENT	W. 24.7	22.7
	VOID RATIO	e 0.48	0.44
	SATURATION	S. 73.7	73.7
	DRY DENSITY LB CU FT	1.63	1.63
FINAL	VOID RATIO AFTER CONSOLIDATION	e 0.410	0.410
	TIME FOR 50 PERCENT CONSOLIDATION, MIN	0.8	0
	WATER CONTENT	W. 22.1	22.1
	VOID RATIO	e 0.38	0.38
NORMAL STRESS, T/SQ FT	σ	4.80	4.80
	MAXIMUM SHEAR STRESS T/SQ FT	τ_{max} 3.33	3.40
ACTUAL TIME TO FAILURE, MIN	t_f	20	20
RATE OF STRAIN IN MIN		0.002	0.002
ULTIMATE SHEAR STRESS T/SQ FT			

TYPE OF SPECIMEN *Remolded* 3.0 IN SQUARE 0.4 IN THICK

CLASSIFICATION *very fine sand (SC)*

LL *28* PL *10* PI *12* G *24.3*

REMARKS *1. Soil is very fine sand (SC) with 10% fines. 2. Soil is very fine sand (SC) with 10% fines. 3. Soil is very fine sand (SC) with 10% fines.*

PROJECT *Cooper River D-11-15-16*

AREA *INTAKE CHANNEL*

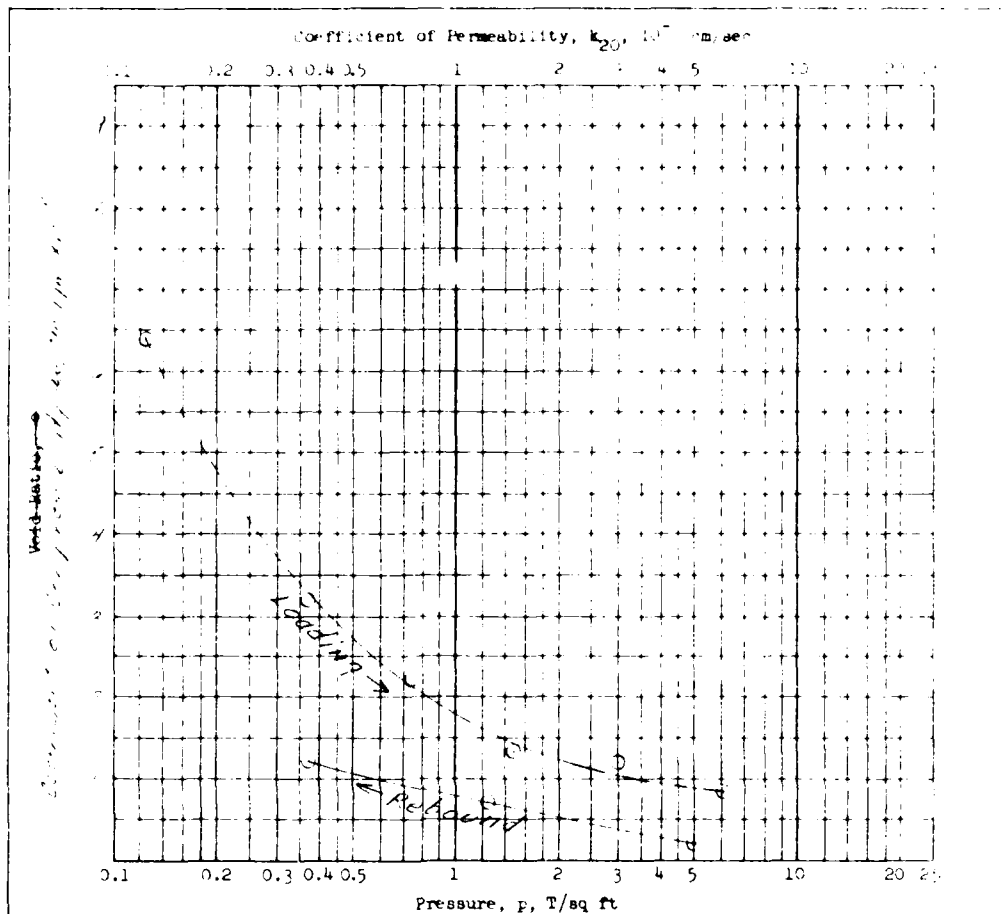
BORING NO *IT-13* SAMPLE NO *Composite 12"*

DEPTH *0.0-5.0'* DATE *November 1965*

DIRECT SHEAR TEST REPORT

Coefficient of Permeability, k_v , in sec

Type of Specimen	1 - 1/2 in. (1)		Before Test	After Test
Diam 4.75 in.	Ht 1.0	Water Content, w_o	15.7 %	w_f 12.1 %
Overburden Pressure, p_o	T/eq ft	Void Ratio, e_o	0.493	e_f 0.413
Preconsol. Pressure, p_c	T/eq ft	Saturation, S_o	83.7 %	S_f 100 %
Compression Index, C_c	0.1	Dry Density, γ_d	10.9 lb/ft ³	
Classification	Very Fine (ML)	k_{20} at e_o	$\times 10^{-7}$ cm/sec	
LL 20	G_s 2.63	Project	St. Stephen S. Culvert	
PL 1		Area	INTAKE CHANNEL	
Remarks	(1) Sample removed from top of specimen at 15.1% (C.M. 10%) and dry density of 10.9 lb/ft ³ (min. density)		Boring No.	ST-2, ST-21, ST-27
	(2) Consolidation following sample		Sample No.	Composite B
	ST-2, S-2 ST-23, S-2		Depth	2.0 to 15.0'
	ST-21, S-2 ST-27 S-2		Date	Dec 11, 1970
CONSOLIDATION TEST REPORT				



Type of Specimen		Before Test		After Test	
Diam	4.44 in.	Ht	1.0 in.	Water Content, w_o	15.7 %
Overburden Pressure, P_o	T/sq ft			Void Ratio, e_o	0.472
Preconsol. Pressure, P_c	T/sq ft			Saturation, S_o	82 %
Compression Index, C_c	0.11			Dry Density, γ_d	10.77 lb/ft ³
Classification	clay of fine sand (SC)			k_{20} at e_o	$\times 10^{-7}$ cm/sec
LL	28	G_s	2.65	Project Cooper River 2 - 10-10-10 Station 10+50, 5 C.M. line	
PL	16	D_{10}			
Remarks (1) samples remolded & approx. moisture content of 15.9% (2) samples remolded & approx. moisture content of 15.9% (3) samples remolded & approx. moisture content of 15.9%		Area			
		Boring No. 17-13, 17-27			
(4) samples remolded & approx. moisture content of 15.9% (5) samples remolded & approx. moisture content of 15.9%		Depth	3'-5"	Sample No.	Comp. T-1
		Date		10-10-10	
CONSOLIDATION TEST REPORT					

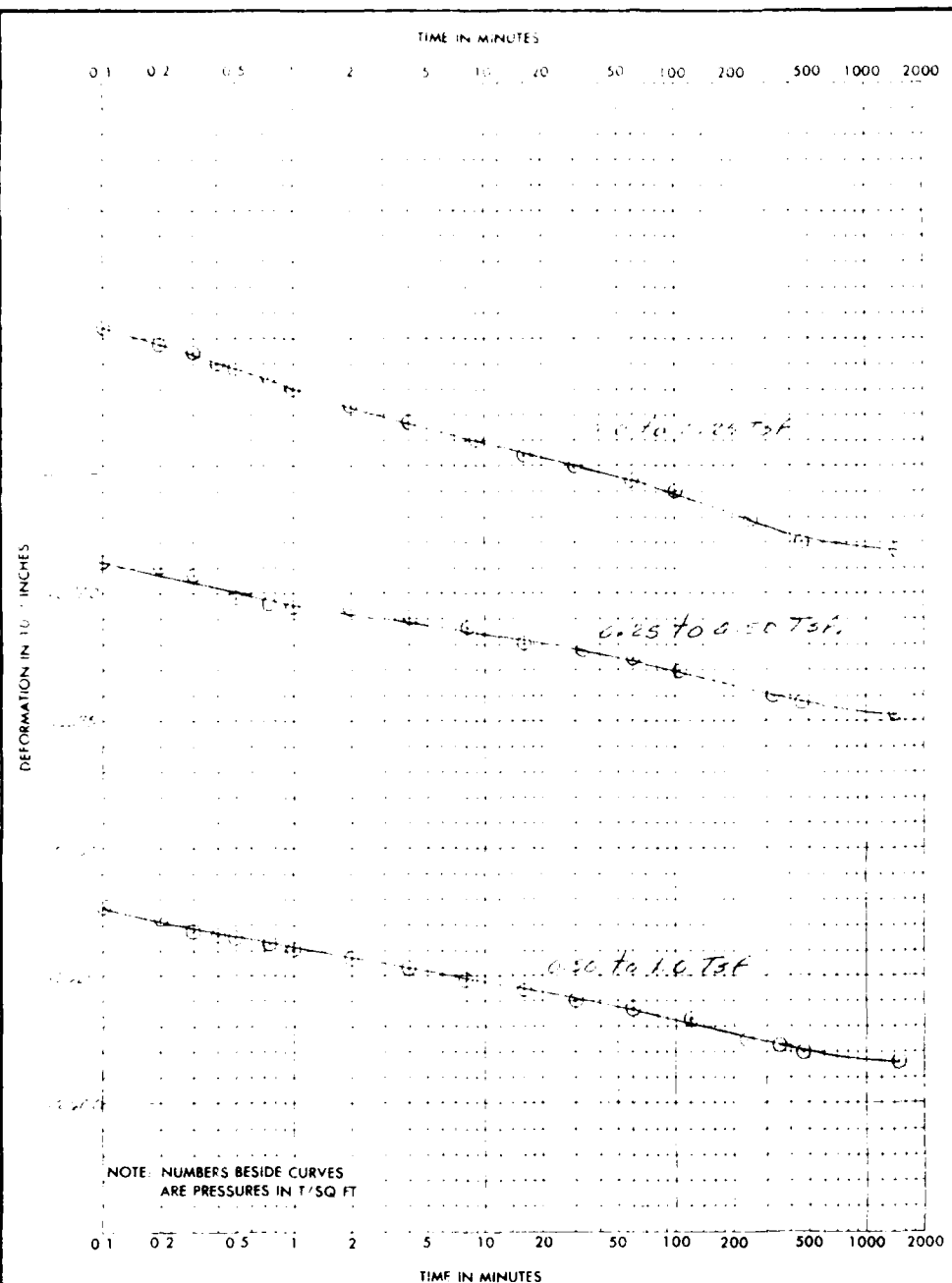
CONSOLIDATION TEST REPORT

ENG FORM 2090
1 MAY 51

PREVIOUS EDITIONS ARE OBSOLETE

Sheet 2 of 2

T-63-12



PROJECT *Sevier River Diversion, St. Stephen, S. Carolina*

AREA *1477AE*

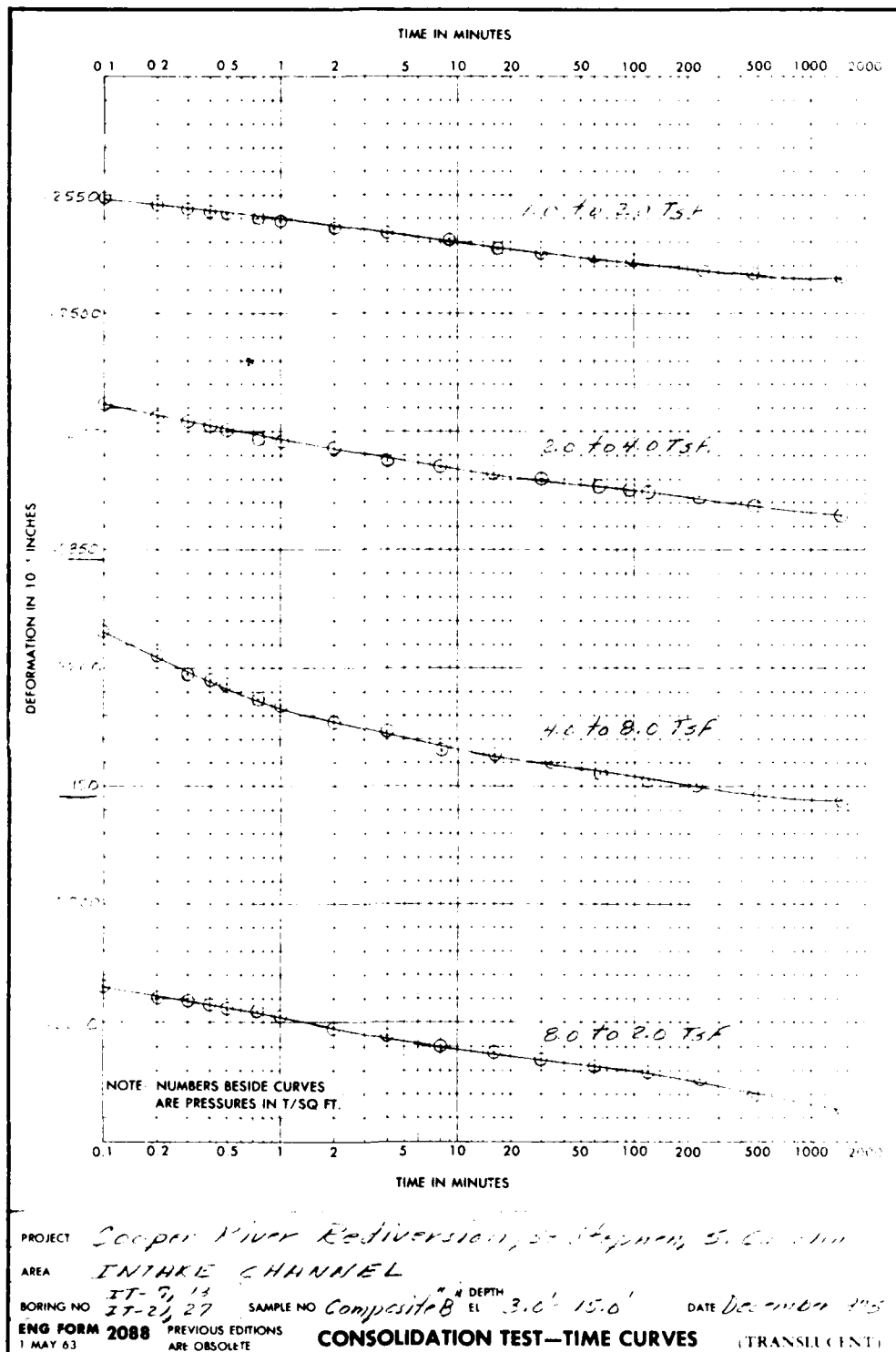
BORING NO. *17-11* SAMPLE NO. *Comp 17B* DEPTH *4.0 to 5.0'* DATE *December 1975*

ENG FORM 2088 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE

CONSOLIDATION TEST—TIME CURVES (TRANSLUCENT)

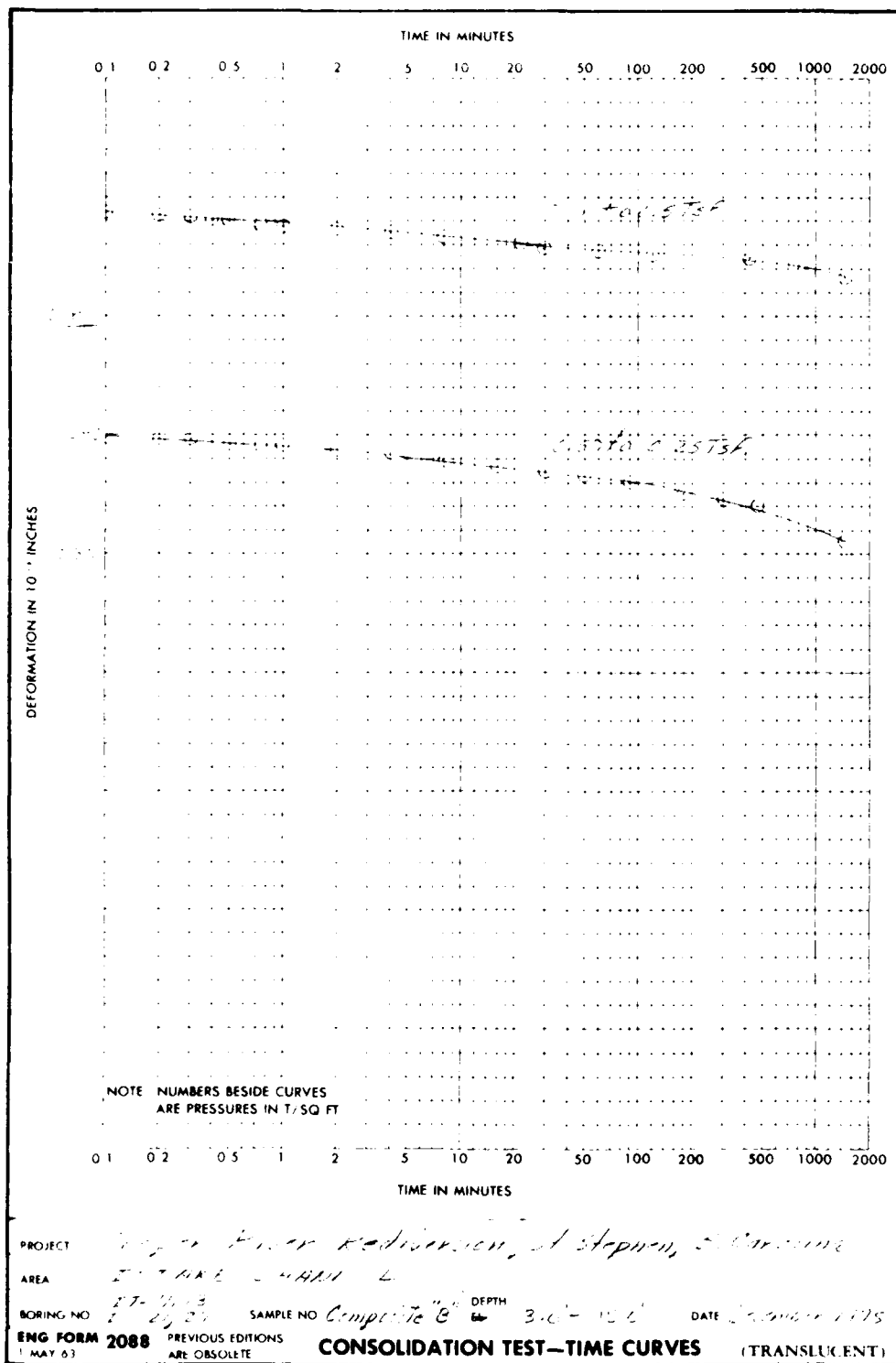
Sheet 2 of 5

T-64 T-63



2.0 to 4.0 TSF

T-65 + 64



T-66 T-65

Report of 1109 NO.
SANDIA 75-32, Charge 1
Work Order NO.
9283
Date Reported
25 October 1975

District	Project
Charleston	COOPER RIVER REDIVERSION
Date Received	St. Stephen, S. C.
14 August 1975	
Location	
Intake Canal	

Description	Hole No. IT-1A
Bar Samples of Disturbed Soils	

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SAD Form 2012
10 Mar 71

Tested by	JF	Checked by	WLB
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Street 1 101

Replaces edition of 16 Jun 66 which may be used until exhausted.

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Tested by	Checked by

Street 1 of 1

Replaces edition of 16 Jun 66 which may be used until exhausted.

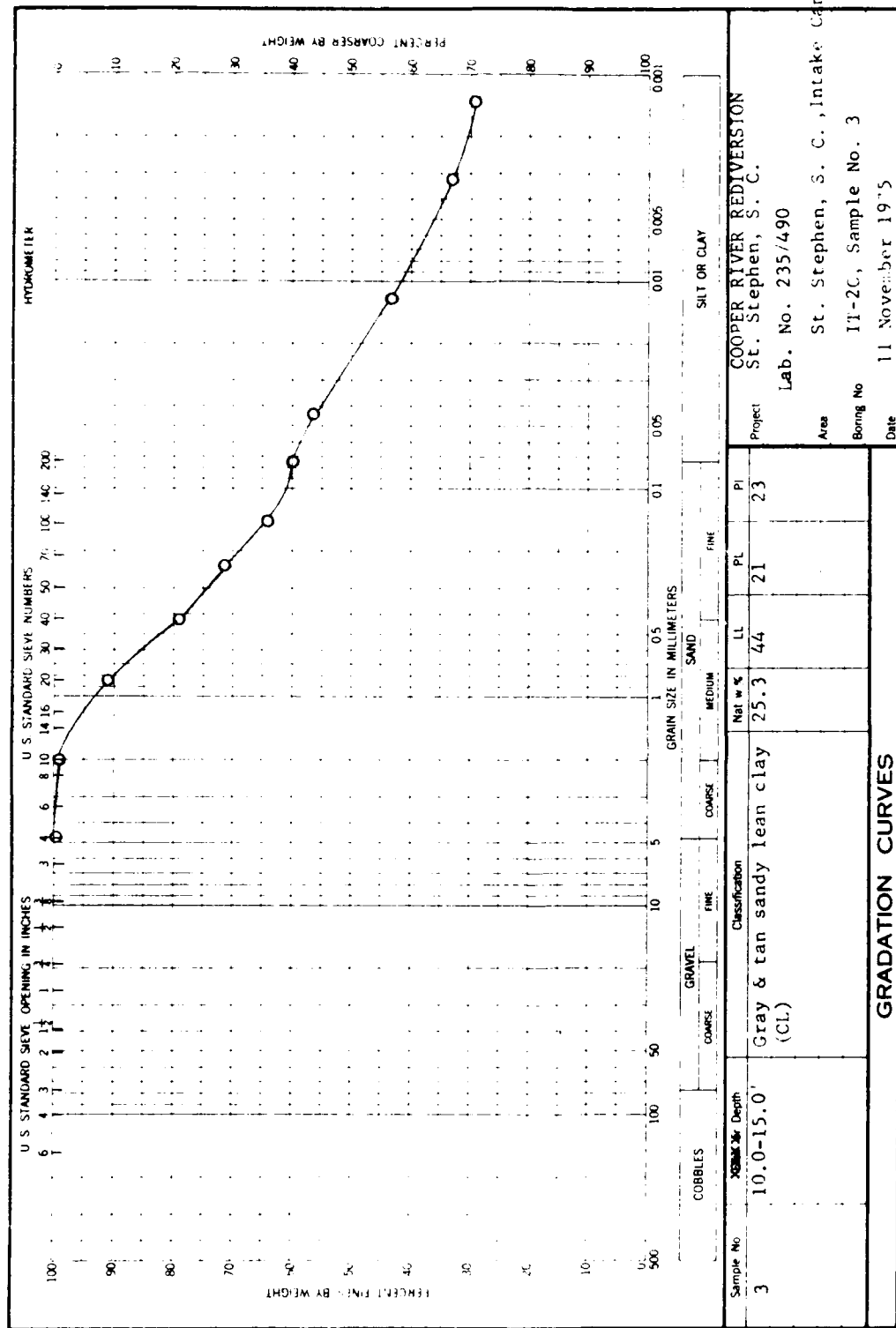
T-70

VISUAL CLASSIFICATION AND FIELD MOISTURE CONTENT OF SOIL SAMPLES						
District		Project		Requisition No.		
Charleston		COOPER RIVER REDIVERSION		SANGA 75-32, Change 1		
Date Received		St. Stephen, S. C.		Work Order No.		
14 August 1975				9283		
Location				Date Reported		
Intake Canal				25 October 1975		
Description				Hole No. IT-2A		
Jar Samples of Disturbed Soils						
Lab No.	Sample No.	Depth (ft)	% Moisture	Visual Classification and/or Remarks		
235	1	0.0-3.0	9.3	Gray silty sand (SM)		
478	2	3.0-10.0	24.9	Tan & brown lean clay (CL) with some sand		
479	3	10.0-15.0	30.4	Reddish brown & light gray clayey inorganic silt, high LL (MH)		
480	4	15.0-16.0	--	No test		
481	5	20.0	--	No test		
482	6	20.0-25.0	21.2	*Tan clayey sand, high LL (SC-H) with a trace of gravel sizes		
483	7	25.0-35.0	28.0	Tan silty sand (SM)		
484	8	35.0-37.5	--	No test		
485	9	37.5-39.5	--	No test		
486	10	39.5-	--	No test		
487						
See lab classification data on LNS Form 2087.						

T-71

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

WORK ORDER NO. 9283
Req. No. 11-2C-75-72



ENG. MAP. 2087

T-74 T-73

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Tested by JF

Checked by WLB

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T-75 T-74

VISUAL CLASSIFICATION AND FIELD MOISTURE CONTENT OF SOIL SAMPLES									
District		Project		Requisition No.		Work Order No.			
Charleston		COOPER RIVER REDIVERSION		SANCA 75-32, Change 1		9283			
Date Received		Location		Date Reported		11 November 1975			
14 August 1975		Intake Canal		11 November 1975					
Description		Jar Samples of Disturbed Soils		IT-3A					
Lab No.	Sample No.	Depth (ft)	% Moisture	Visual Classification and/or Remarks					
235/507	1	0.0-1.5	20.1	Gray clayey inorganic silt, low LL (ML) with some sand					
508	2	1.5-4.5	14.9	Light gray silty sand (SM) slightly plastic					
509	3	4.5-6.0	-	No test					
510	4	6.0-7.5	18.9	Light gray clayey inorganic silt, high LL (MH)					
511	5	7.5-9.0	-	No test					
512	6	9.0-13.0	16.1	Gray & tan clayey sand (SC)					
513	7	13.0-18.0	-	No test					
514	8	18.0-21.5	-	No test					
515	9	21.5-24.0	-	No test					
516	10	24.0-26.0	25.4	Gray silty sand (SM) with occasional lenses of clay					
517	11	26.0-28.0	-	No test					
518	12	28.0-32.5	-	No test					
519	13	32.5-36.0	-	No test					
520	14	36.0-37.5	55.2	Dark gray clayey inorganic silt, high LL (MH) with some sand					

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 10 Mar 71
 Replaces edition of 16 Jun 66 which may be used until exhausted.

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Sheet 1 of 2

T-77 T-76

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Sheet 2 of 2

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T-78

VISUAL CLASSIFICATION AND FIELD MOISTURE CONTENT OF SOIL SAMPLES					
District		Project		Requisition No.	
Charleston		COOPER RIVER REDIVERSION		SANGA 75-32, Change 1	
Date Received		St. Stephen, S.C.		Work Order No.	
14 August 1975				9283	
Location				Date Reported	
Intake Canal				11 November 1975	
Description				Hole No. IT-3B	
Jar Samples of Disturbed Soils					
Lao No.	Sample No.	Depth (ft)	% Moisture	Visual Classification and/or Remarks	
2357	1	0.0-4.0	-	No test	
526	2	4.0-5.5	19.2	Gray & tan sandy silty lean clay (CL)	
527	3	5.5-10.0	29.3	Light gray & tan clayey inorganic silt, high LL (MH)	
528	4	10.0-13.5	19.9	Tan clayey sand (SC)	
529	5	13.5-20.0	18.9	Tan clayey sand (SC)	
530	6	20.0-24.0	24.8	Tan clayey sand (SC)	
531	7	24.5-29.0	-	No test	
532	8	29.0-39.5	-	No test	
533	9	39.5-40.5	-	No test	
534	10	40.5-44.0	-	No test	
535	11	44.0-45.0	23.1	Gray poorly graded silty sand (SP-SM)	

S40 Form 2012
19 Mar 71
Replaces edition of 6 Jan 68
T-79

Tested by WLB

Sheet 1 of 1

0-Street	Project	Requestion No.
Charleston	COOPER RIVER REDIVERSION	SANCA '5-32, Change 1
Date Received	St. Stephen, S. C.	Work Order No.
14 August 1975		9283
Location		Date Reported
Intake Canal		11 November 1975

SAD Form 2012
10 Mar 71
Tested by JF Checked by WLB Sheet 1 of 1
Replaces edition of 16 Jun 66 which may be used until exhausted.

10 Form 201
10 Mar 71

Replaces edition of 16 Jun 66 which may be used until exhausted.

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Tested by	Checked by
J.F.	A.B.

Replaces edition of 16 Jun 66 which may be used until exhausted.

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T-82 - A.

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Sep. 1

Respectfully,
 10 Jun 66 which may be lost until extracted.

T-83

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100

1. *Chlorophyll a* (Chl *a*) is the primary photosynthetic pigment in most plants and algae. It is a green pigment that absorbs light energy in the blue and red regions of the visible spectrum. Chl *a* is essential for the light-dependent reactions of photosynthesis.

T-85

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Tested by JF Checked by NLB Sheet 1 of 1

Replace, after 15 Jun 65 which may be used until exhausted.

T-87

Requestion No.
SANDIA 75-32, Change 1
Work Order No.
9283
Date Reported
11 November 1975

CHOCOMA RIVER REDIVERSION
 Lt. Stephen, S. C.

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Localities

Intake: C

Desc 191

lar Samples of Disturbed Soils

Hole No. IT-6B

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Mar 71

Tested by	JF	Checked by	WLB
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Street 101

Replaces edition of 16 Jun 66 which may be used until exhausted.

7-88

Station	Project	Reference No.
Charleston	CUMBER RIVER REDIVERSION	SANCA 75-32, Change 1
Date Received	By	Work Order No.
14 August 1975	Stephen, S. G.	9283
Location	Date Reported	
Intake Canal	11 November 1975	
Description		
Bar Samples of Disturbed Soils		
		Hole No. IT-7

Hole No. IT-?

Far Samples of Disturbed Soils

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100-100000

Tested by JF

Checked by WLB

110 1 13815

Reference is made to the fact that the material may be used and is exhausted.

T-89 T-89

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601-210-7337

Tested by	J.P.	Checked by	W.L.B
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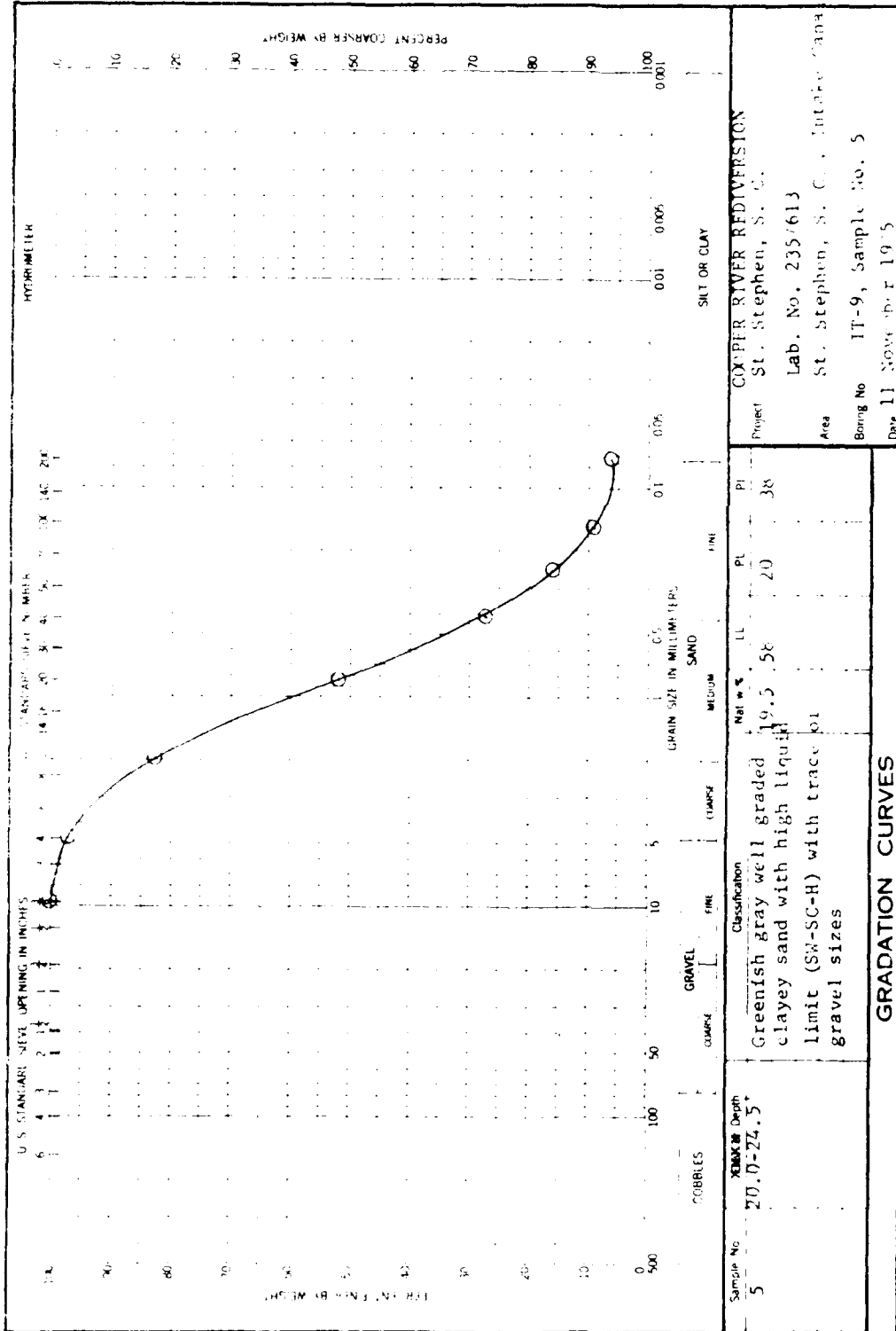
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Ref. 2, p. 107 of 1960, pp. 107-108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921,

7-91

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

WORK ORDER NO. 92-3
Req. No. 1003-1-15-1



ENG 2087

T-92 T 91

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Sheet 1 of 1

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T-93

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T-95

Submitted by	Checked by	Submitted

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THE UNIVERSITY OF CHICAGO

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14 August 1975
 Received and
 processed

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Intake Cancell

Discussion

Jar Samples of Disturbed Soils

Hole No. 11-917

THE UNIVERSITY OF CHICAGO

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SAD Form 2012

Tested by	Checked by
	JLB

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Replaces edition of 16 Jun 66 which may be used until exhausted.

T-96

COASTAL RIVER AND FRESH WATER MOISTURE CONTENT OF SOIL SAMPLES			
COASTAL RIVER, ALABAMA St. Stephen, S.C.		Reference No. SANGA 25-30, Change 1 Work Order No. 92/2 Date Received 11 November 1975	
Hole No. 10-11			
Lab. No.	Sample No.	Depth (ft)	Visual Description and/or Remarks
635	1	1.0	No test
636	2	5.0	Tan & gray clayey sand (SC) fine sand sizes
637	3	10.0	No test
640	4	61.1	Gray silty fat clay (CH)
641	5	26.6	Gray clayey medium to coarse sand (SC)
642	6	25.5-30.0	Light gray calcareous clayey sand (SC) with limestone

REGISTRATION NO. 75-36, CHARGE: 1
Work Order No.

Regulation 4

SAVANA 75-32, Chicago, Ill.
 York Corp. Inc.

Date Received 11 November 1975

THE UNIVERSITY OF CHICAGO

[illegible]

Tanaka, T. and O. H. (1972) Studies on the

1530

tan and light gray clayey sand (SC) fine sand (size)

TEST OF

gray silty fat clay (CH)

gray clayey sand (SC)

7572 OH

dark gray silty lean clay (CL) with light tan sand layers

1. The first step is to identify the problem.
 2. The second step is to analyze the problem.
 3. The third step is to develop a solution.
 4. The fourth step is to implement the solution.
 5. The fifth step is to evaluate the solution.

stics program in cooperation with the

Sample No.	Depth (ft.)	% Moisture
650	1.0-5.0	7.6
651	5.0-10.0	-
652	10.0-15.0	18.1
653	15.0-20.0	-
654	20.0-24.0	58.4
655	24.0-30.0	36.9
656	30.0-40.5	-
657	40.5-45.0	37.2

7-60000

Tested by	WSS	Checked by

Replaces portion of 16 Jan 66 which may be used in the exhibit file.

Shree.

T-98 : 91

9223
Office Report
11 November 1975

"I have been thinking about you
L. Stephen, D.D."

[illegible]

Vol. No. 11-11.

11-10-1964

Sample No.	Depth (ft.)	% Moisture	Visual Classification and Remarks
235	1	13.2	Light brown silty sand (SM) slightly plastic
643	2	29.1	Tan sandy inorganic silt, low LL (96)
644	3	32.9	Light brown silty sand (SM) with a trace of silt
646	4	-	No test
647	5	24.5	Green silty sand (SM) with some shell fragments
648	6	-	No test
649	7	-	No test

T-99

SOIL CLASSIFICATION AND FIELD MOISTURE DATA SHEET

1960 AC

DATE REPORTED: 14 Nov 1975

LOCAL: 10400

PROJECT: 10400

TESTER: 10400

ANALYST: 10400

DATE RECEIVED: 11 November 1975

NO. OF SAMPLES: 7

NO. OF TESTS: 7

NO. OF OBSERVATIONS: 7

NO. OF RECORDS: 7

NO. OF PAGES: 7

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NO. OF NOTES: 7

NO. OF REFERENCES: 7

NO. OF SOURCES: 7

NO. OF METHODS: 7

NO. OF EQUIPMENT: 7

NO. OF MATERIALS: 7

NO. OF SUPPLIES: 7

NO. OF TOOLS: 7

NO. OF INSTRUMENTS: 7

NO. OF REAGENTS: 7

NO. OF STANDARDS: 7

NO. OF CONTROLS: 7

NO. OF BLANKS: 7

NO. OF REPEATS: 7

NO. OF AVERAGES: 7

NO. OF DEVIATIONS: 7

NO. OF COEFFICIENTS: 7

NO. OF CORRELATIONS: 7

NO. OF REGRESSIONS: 7

NO. OF HYPOTHESES: 7

NO. OF TESTS: 7

NO. OF RESULTS: 7

NO. OF CONCLUSIONS: 7

NO. OF RECOMMENDATIONS: 7

NO. OF REFERENCES: 7

NO. OF SOURCES: 7

NO. OF METHODS: 7

NO. OF EQUIPMENT: 7

NO. OF MATERIALS: 7

NO. OF SUPPLIES: 7

NO. OF TOOLS: 7

NO. OF INSTRUMENTS: 7

NO. OF REAGENTS: 7

NO. OF STANDARDS: 7

NO. OF CONTROLS: 7

NO. OF BLANKS: 7

NO. OF REPEATS: 7

NO. OF AVERAGES: 7

NO. OF DEVIATIONS: 7

NO. OF COEFFICIENTS: 7

NO. OF CORRELATIONS: 7

NO. OF REGRESSIONS: 7

NO. OF HYPOTHESES: 7

NO. OF TESTS: 7

NO. OF RESULTS: 7

NO. OF CONCLUSIONS: 7

NO. OF RECOMMENDATIONS: 7

Role No. 11-12

1960 AC

DATE REPORTED: 14 Nov 1975

LOCAL: 10400

PROJECT: 10400

TESTER: 10400

ANALYST: 10400

DATE RECEIVED: 11 November 1975

NO. OF SAMPLES: 7

NO. OF TESTS: 7

NO. OF OBSERVATIONS: 7

NO. OF RECORDS: 7

NO. OF PAGES: 7

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NO. OF NOTES: 7

NO. OF REFERENCES: 7

NO. OF SOURCES: 7

NO. OF METHODS: 7

NO. OF EQUIPMENT: 7

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NO. OF SUPPLIES: 7

NO. OF TOOLS: 7

NO. OF INSTRUMENTS: 7

NO. OF REAGENTS: 7

NO. OF STANDARDS: 7

NO. OF CONTROLS: 7

NO. OF BLANKS: 7

NO. OF REPEATS: 7

NO. OF AVERAGES: 7

NO. OF DEVIATIONS: 7

NO. OF COEFFICIENTS: 7

NO. OF CORRELATIONS: 7

NO. OF REGRESSIONS: 7

NO. OF HYPOTHESES: 7

NO. OF TESTS: 7

NO. OF RESULTS: 7

NO. OF CONCLUSIONS: 7

NO. OF RECOMMENDATIONS: 7

Sample No.	Depth (ft)	% Moisture	Atterberg Limits	Notes
658	1.0	-	-	No test
659	5.0	20.2	-	Tan & gray clayey sand (40) fine sand sizes
660	10.0	-	-	No test
661	15.0	40.2	-	Tan fat clay (OH)
662	20.0	65.7	90 22 68	Dark gray fat clay (OH)
663	25.5	-	-	No test
664	26.5	-	-	No test

T-100 T-77

Sample No.	Depth (ft)	% Moisture	Visual Description
235	1.0-5.0	11.0	Tan & gray silty sand (SM) fine sand sizes
665	5.0-10.0	-	No test
666	10.0-15.0	-	No test
667	15.0-20.0	33.6	Tan fat clay (CH) with a trace of fine sand
668	20.0-24.0	-	No test
669	24.0-28.5	22.1	Green silty, fine to medium sand (SM)
670	28.5-30.0	21.7	Green calcareous clayey fine to medium sand (SC) with a trace of gravel

DATE	TESTED BY	DATE	TESTED BY
10/10/01	10/10/01	10/10/01	10/10/01

T-101

Requestion No.
SANC 75-32, Change 1

COOPER RIVER REDUCTION
St. Stephen, S.C.

P: 0.21

100-11847

U312 92-21,23

5.61-195

1971

Intake (mm)

50-10500

lar Samples of Disturbed Soils

NY 71-11705

VOLUME 1

Sample No.	Depth (ft.)	% Moisture	Description
685	0.0-6.0	14.5	Tan & gray silty sand (SM)
686	6.0-12.0	-	No test
687	12.0-18.0	44.6	Light gray silty fat clay (CH)
688	18.0-26.0	74.7	Gray fat clay (CH)
689	26.0-28.0	-	No test
690	28.0-29.5	22.7	Grayish brown silty medium to coarse sand (SM)
691	29.5-31.0	-	No test
692	31.0-39.5	-	No test
693	39.5-44.5	-	No test

SAC Fort Worth

Tested by IDS

Checked by WLB

Sheet 1 of 1

Replaces edition of 16 Jun 66 which may be used until exhausted.

T-104

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17:25

Replace, edition of 16 Jun 66 which may be used until exhausted.

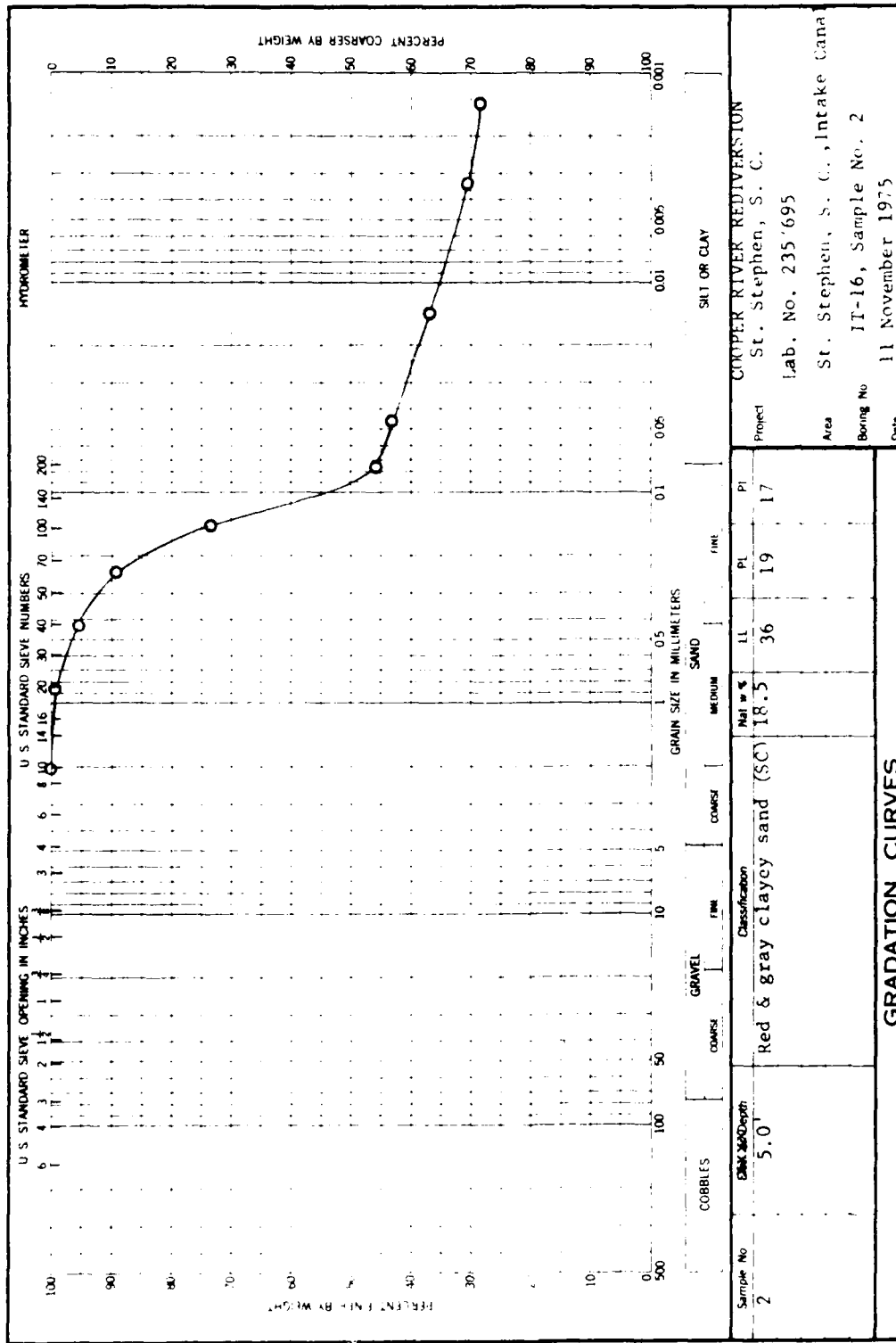
Tested by	HDS	Checked by	WLS
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1. 13015

T-105 T-104

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

WORK ORDER NO. 9283
Req. No. 55-32



ENG. 2087

T-106

[illegible]

Tested by	HDS	Checked by	WLB
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Received 22 October 2003; accepted 10 November 2003

Street 1 1 1

T-107

[illegible]

SAD Form 2012
10 Mar 71

Tested by -- Checked by W.L.B.

Replaces edition of 16 Jun 66 which may be used until exhausted.

Sheet 1 of 1

T-108

S. No.	Project	Registration No.
Charleson	COOPER RIVER ADVENTURE	SANCA 75-32, Change 1
Date Rec'd:	St. Stephen, S.C.	Work Order No.
14 August 1975		9283
Total		Date Reported
	Intake Canal	11 November 1975

Registration No. SANGA 75-32, Change 1
Wolk 6-der No. 9283
Date Reported 11 November 1975

COOPER RIVER DIVERSION
St. Stephen, S.C.

14 August 1975

Intake Call

Tested

Far Samples of Disturbed Soils

Hole No. IT-17

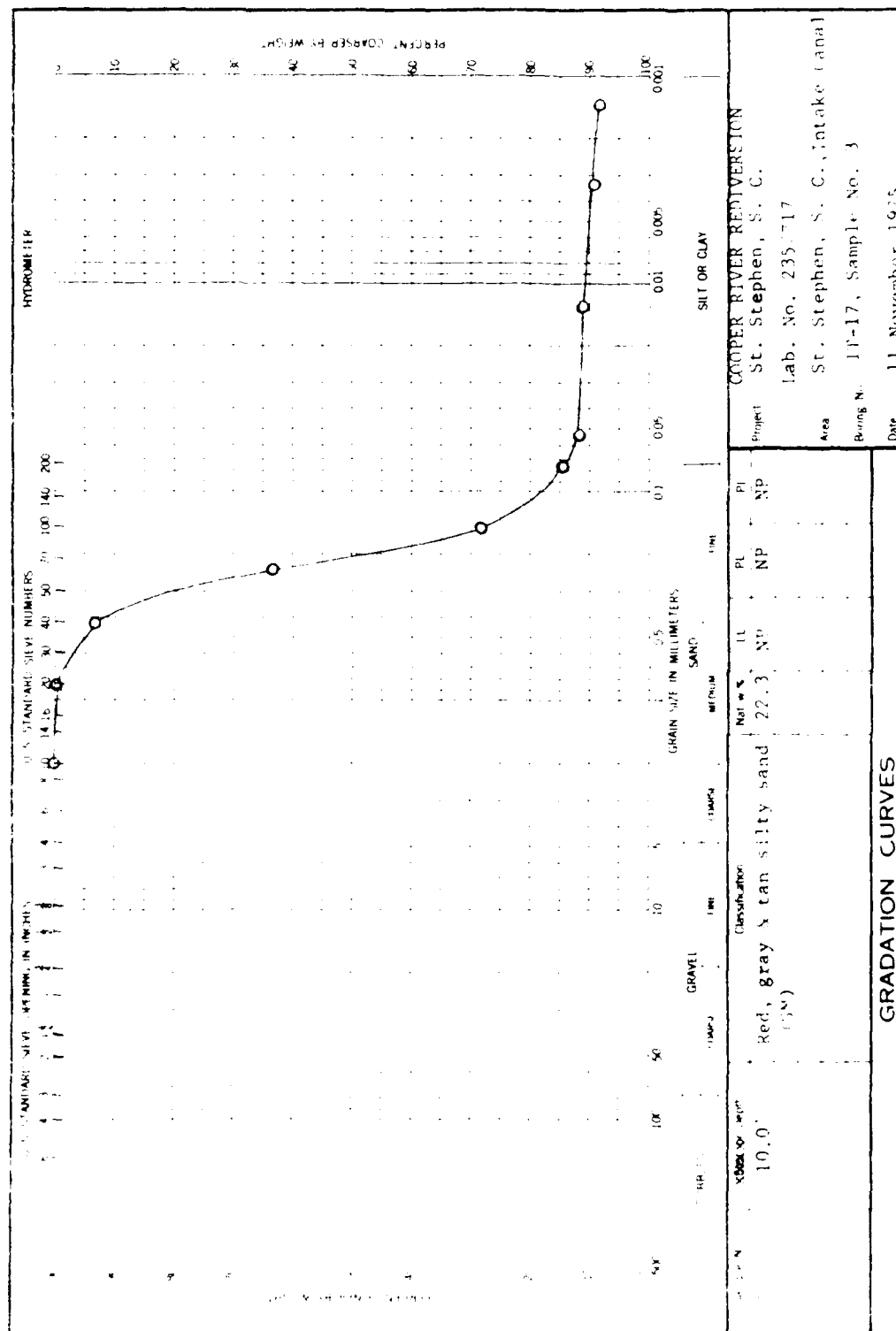
[illegible]

See lab classification data on ENG Form 2087.

Tested by HDS

that would have been passed at the 1991 meeting of the American Academy of Religion.

WORK ORDER NO. 4455
SANC-A-75-32
Req. No.



ENC 2087

T-110

SANCA 75-32, Change 1 Work Order No. 9283 Date Reported 11 November 1975			
Location		Hole No. 75-18	
Sanca 75-32, Change 1 Work Order No. 9283 Date Reported 11 November 1975		Hole No. 75-18	
Sample No.	Depth (ft)	Moisture (%)	Remarks
721	1.0	18.6	Dark gray & tan fat clay (CH) with a trace of sand
722	5.0	-	No test
723	10.0	-	No test
724	15.0	21.3	Gray silty sand (SM)
725	20.0	-	No test
726	40.5	29.4	Dark gray silty sand (SM) with seams of gray clay and fine sand sizes

T-111

Department of the Army, Corps of Engineers, 111 So. Cobb Dr., Marietta, Ga. 30060

COOPER RIVER REDIVERSION St. Stephen, S. C.				Hole No. IT-20		Revised No. SANCA 75-32, Change 1 Well Log No. 9283 Date Rechecked 11 November 1975	
SOIL SAMPLES							
No.	Sample	Depth (ft.)	Disturbed	Remarks	Test	Remarks	Remarks
735	1	1.0			No Test		
736	2	5.0		Light gray & tan clayey sand (SC) fine sand size			
737	3	10.0		Gray & tan silty sand (SM) with a pocket of light gray clay			
738	4	12.0		Light gray silty fat clay (CH)			
739	5	13.5		Tan silty sand (SM) with a pocket of light gray clay			
740	6	20.0		Light gray silty fat clay (CH) with some fine sand			
741	7	30.0		Light gray silty sand (SM) with a trace of clay			
742	8	36.0		No Test			

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T-114

Department of the Army, Research and Development Laboratory, Corps of Engineers, 611 So. Cobb Dr., Marietta, Ga. 30060

WATER POTENTIAL AND FIELD MOISTURE CONTENT OF SOIL SAMPLES

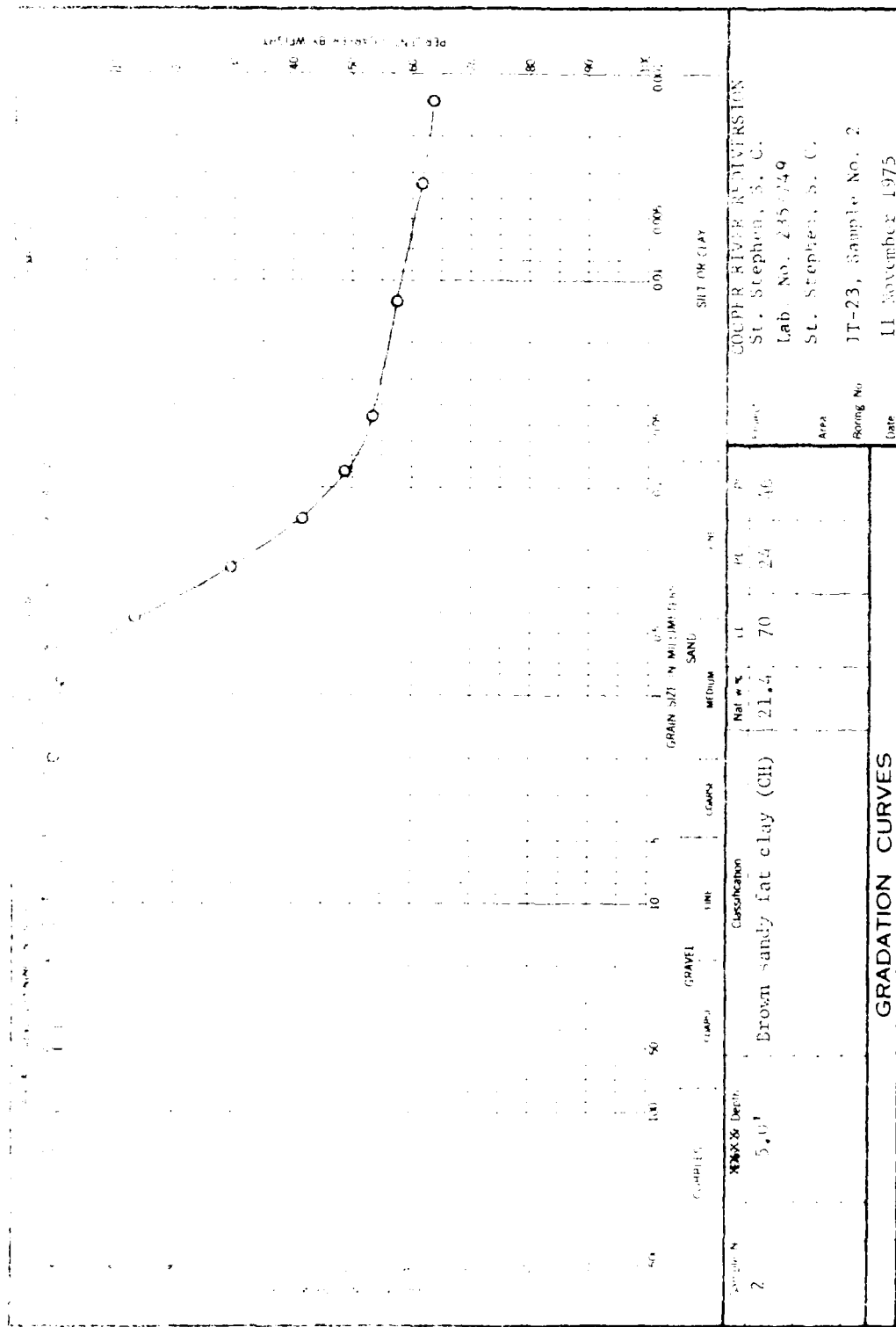
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Lab classification data
on ENG Form 2087.

[illegible]

T-115

COOPER RIVER REVISION
 ST. Stephen, S. C.
 Lab. No. 235-149
 ST. Stephen, S. C.



ENG. 2087

T-116 215

USUAL CROPPING AND FIELD MOISTURE CONTENT OF SOIL SAMPLES

Hole No. IP-24

Sample No.	Depth (ft.)	Water	Notes
754	1.0		No Test
755	5.0	18.0	Gray, tan & red clayey sand (SC)
756	10.0	27.7	Gray & tan silty sand (SM) fine sand sizes
757	15.0	-	No Test
758	20.0	22.2	Tan silty sand (SM) fine sand sizes
759	33.0	"	No Test

Date	Tested by	HDS	Checked by	WLB	Copied	Page
10-10-78						1
10-10-78						6

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

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T-116

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

1950

22.10.22

Dark gray silty lean clay (CL) with thin bands of light gray sand

Sheet 1 of 1

Replaces edition of 16 Jun 66 which may be used until exhausted.

T-118 T-117

Sample No.	Depth (ft.)	Color	Moisture (%)	Remarks
182	0	-	-	No test
183	0	-	-	No test
184	0	10.0	41.1	Light gray clayey sand (SC) fine sand size
185	0	15.0	46.8	Gray silty fat clay (CH)
186	0	18.0-19.5	20.0	Gray & tan silty fine to medium sand (SM)
187	0	21.0-22.5	-	No test
188	0	27.0	16.3	Tan poorly graded silty, fine to medium sand (SP-SM)
189	0	34.5-36.0	16.7	Green & brown clayey sand (SC) fine sand size

SAO Form 2017
16 Mar 11

Replaces edition of 16 Jun 66 which may be used until exhausted.	Tested by <u>IDS</u>	Checked by <u>IDS</u>
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T

T-120 T-118

VISUAL CLASSIFICATIONS AND SOIL TEST RESULTS

TAILRACE CANAL
COOPER RIVER REDIVERSION
ST. STEPHEN, S. CAROLINA
(CHARLESTON DISTRICT)

BORING T-9
(Jar Samples)

- J-1 depth: 1.0'
Brown fine sandy CLAY (CL)
W_n = 28.0%
- J-2 depth: 5.0'
Gray-brown silty fine SAND (SM)
- J-3 depth: 10.0'
Gray-brown silty medium to fine SAND (SP-SM)
- J-4 depth: 15.0'
Gray-brown silty medium to fine SAND (SP-SM)
- J-5 depth: 20.0'
Gray silty fine SAND (SM)
- J-6 depth: 33.0'
Gray silty fine SAND (SM) stratified with layers of dark gray CLAY (CH)

BORING T-9A
(Jar Samples)

- J-1 depth: 0.0'-3.0'
Brown silty fine SAND (SM)
- J-2 depth: 3.0'-9.0'
Red-brown clayey medium to fine SAND (SC)
- J-3 depth: 9.0'-12.0'
Brown clayey medium to fine SAND (SC)
- J-4 depth: 12.0'-16.0'
Golden brown clayey fine SAND (SC)
W_n = 32.0%
- J-5 depth: 16.0'-18.0'
Gray silty fine SAND (SM) and CLAY (CL) - stratified
- J-6 depth: 26.7'-28.2'
Gray silty fine SAND (SM) and CLAY (CL) - stratified
- J-7 depth: 30.7'-31.1'
Gray silty fine SAND (SM) and CLAY (CL) - stratified

Insert

T-121 -

Section 12-11 (cont.)

12-11-11. Fine SAND (SM) and CLAY (CL) - stratified

12-11-12. Fine SAND (SM) and CLAY (CL) - stratified

Section 12-11
(See Samples)

12-11-13. Fine SAND (SM) and CLAY (CL)

12-11-14. Fine SAND (SM) and CLAY (CL)

12-11-15. Fine SAND (SM) and CLAY (CL)

Section 12-12
(See Samples)

12-12-1. Fine SAND (SM) and CLAY (CL)

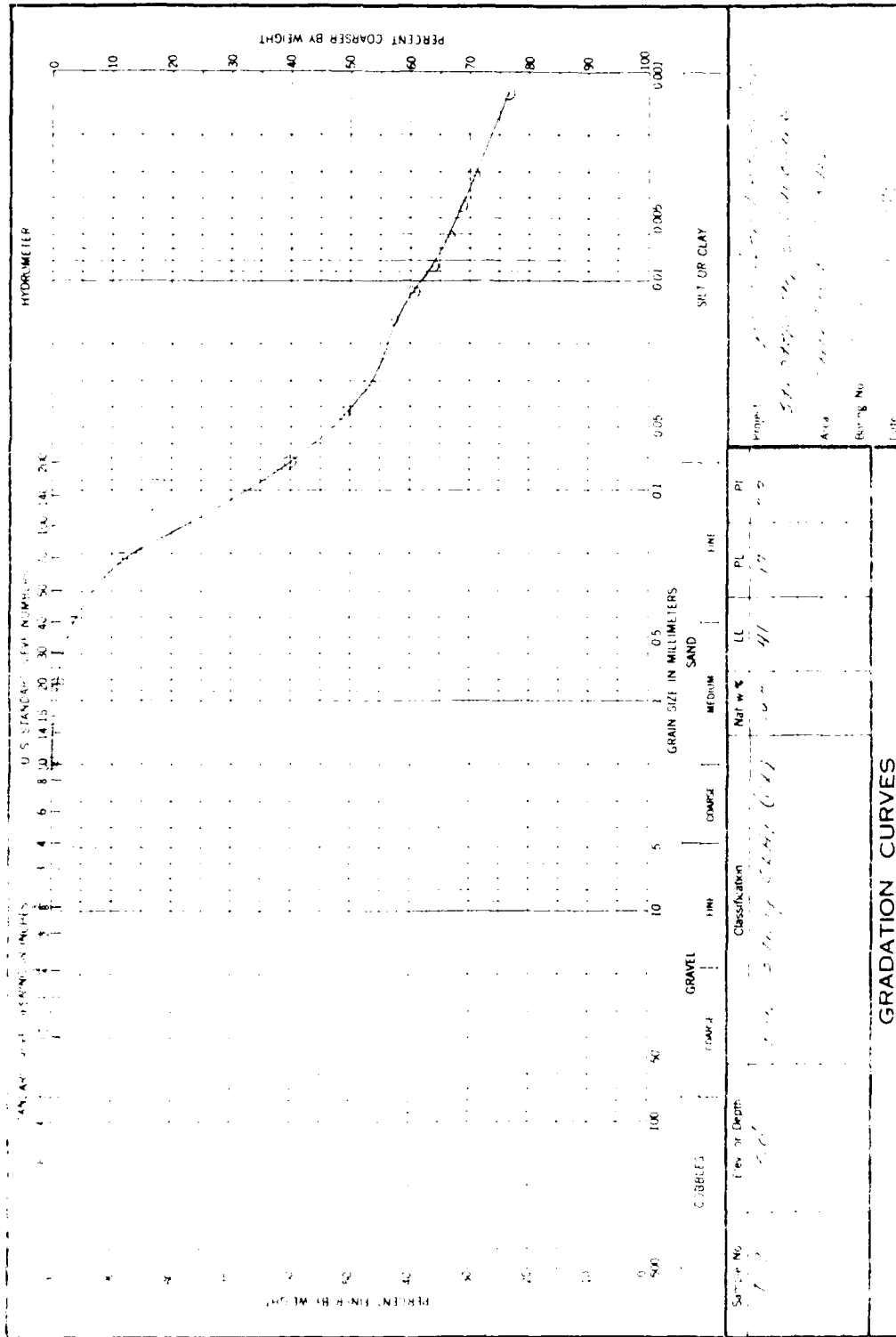
12-12-2. Fine SAND (SM) and CLAY (CL)

12-12-3. Fine SAND (SM) and CLAY (CL)

Section 12-13
(See Samples)

12-13-1. Fine SAND (SM) and CLAY (CL)

12-13-2. Fine SAND (SM) and CLAY (CL)



Imp. 2

T-123

ENG 2087

LOGIN: T-14

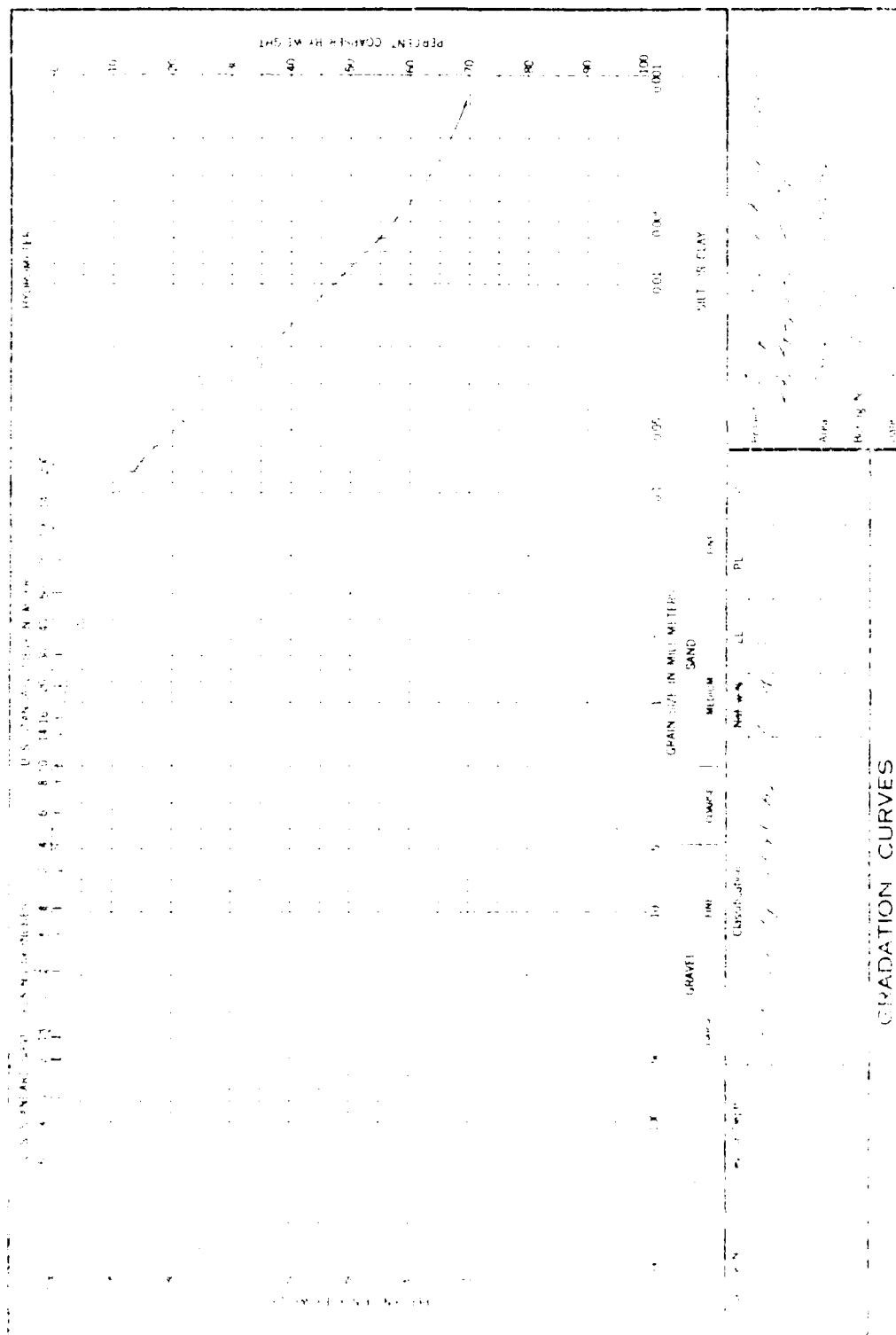
- Depth: 1.0'
- mp: CLAY (CY)
- $\gamma_s = 110.0$
- Depth: 2.0'
- mp: silty clay (SP-IV)
- Depth: 3.0'
- mp: silty clay (AN)
- Depth: 4.0'
- mp: silty clay (AN) - stratified

LOGIN: T-14
(for Samples)

- Depth: 1.0'
- mp: silty clay (AN) w/organic stains
- Depth: 2.0'
- mp: silty clay (AN) w/organic stains
- Depth: 3.0'
- mp: silty clay (AN) w/organic stains
- Depth: 4.0'
- mp: silty clay (AN) w/organic stains
- Depth: 5.0'
- mp: silty clay (AN) w/organic stains

LOGIN: T-15
(for Samples)

- Depth: 1.0'
- mp: silty clay (AN) (SP-IV) w/silt lumps
- Depth: 2.0'
- mp: silty clay (AN) (SP)
- Depth: 3.0'
- mp: silty clay (AN) (SP)
- Depth: 4.0'
- mp: silty clay (AN) (SP)
- Depth: 5.0'
- mp: silty clay (AN) (SP)



7-125

44-38861-10 (cont.)

the 1990s, the number of people in the world who are illiterate has increased from 1.2 billion to 1.5 billion. The number of illiterate people in the world is projected to increase to 1.7 billion by the year 2015. The number of illiterate people in the world is projected to increase to 1.7 billion by the year 2015.

[illegible]

7 (air samples)

...w hair roots

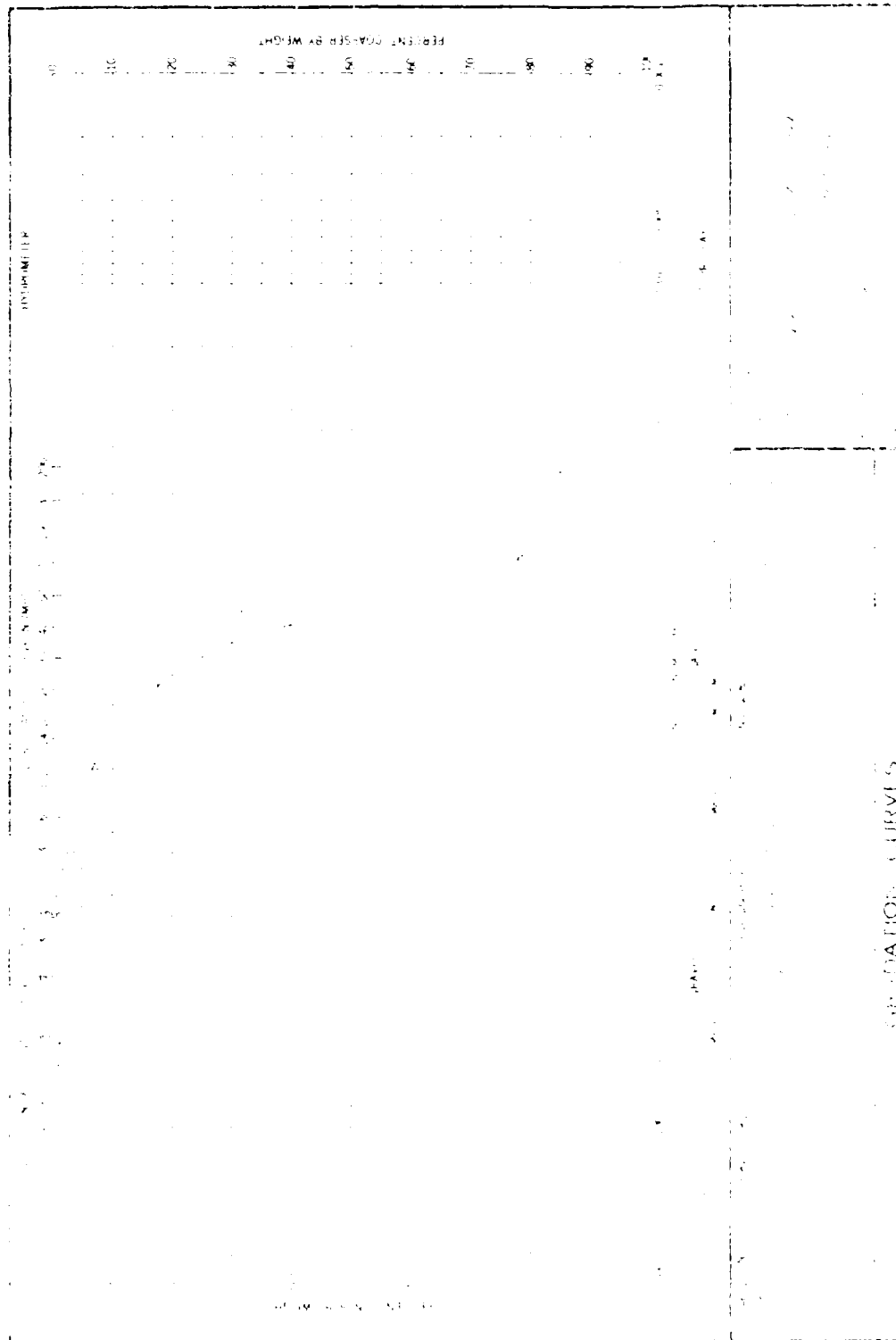
— 1991 —

7-8-1961

4. 100% x 60 hair roots and organic stains

THE UNIVERSITY OF CHICAGO PRESS

T-126



AD-A149 732

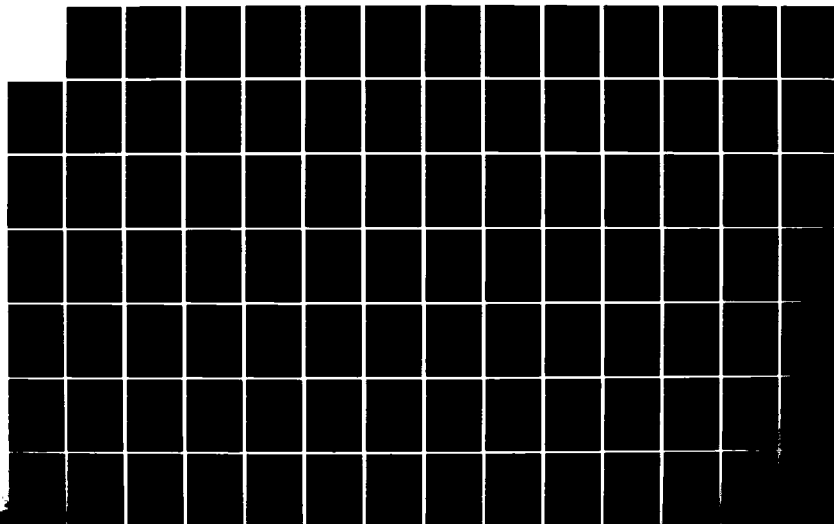
COOPER RIVER REDIVERSION PROJECT LAKE MOULTRIE AND
SANTEE RIVER SOUTH CAR. (U) CORPS OF ENGINEERS
CHARLESTON SC CHARLESTON DISTRICT JUN 76

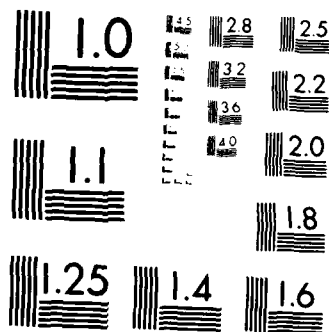
4/5

UNCLASSIFIED

F/G 8/13

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

BORING T-17 (cont.)

- J-5 depth: 20.0'
Gray silty fine SAND (SM)
- J-6 depth: 20.0'
Gray silty fine SAND (SP-SM)

BORING T-18
(Jar Samples)

- J-1 depth: 1.0'
Brown-Gray Sandy CLAY (CL) w/hair roots
- J-2 depth: 5.0'
Gray-Brown CLAY (CH)
- J-3 depth: 10.0'
Gray CLAY (CH)
- J-4 depth: 15.0'
Gray silty fine SAND (SP-SM) w/slight marine odor
- J-5 depth: 20.0'
Gray silty fine SAND (SM) w/decomposed shells
 $W_n = 22.7\%$
- J-6 depth: 25.5 to 27.0'
Gray silty fine SAND (SM) w/Dark Gray fine Sandy SILT Layer (ML)
approx. 1/2" thick

BORING T-19
(Jar Samples)

- J-1 depth: 1.0'
Brown fine sandy CLAY (CL)
w/organic stains
- J-2 depth: 5.0'
Brown fine Sandy CLAY (CL)
 $W_n = 26.2\%$
- J-3 depth: 10.0'
Brown Clayey fine SAND (SC)
 $W_n = 19.3\%$
- J-4 depth: 10.5' to 12.0'
Gray Clayey Med. to fine SAND (SC)
 $W_n = 12.8\%$

BORING T-19 (cont.)

J-5 depth: 12.0 to 13.5'
Gray fine Sandy SILT (ML)
 $W_n = 29.1\%$

J-6 depth: 22.0 to 23.5'
Gray Silty fine SAND (SM) w/Silt Lumps

BORING T-20
(Jar Samples)

J-1 depth: 1.0'
Brown fine Sandy CLAY (CL) w/hair roots
 $W_n = 30.8\%$

J-2 depth: 5.0'
Gray CLAY (CH)

J-3 depth: 10.0'
Gray fine Sandy CLAY (CH) w/hair roots
 $W_n = 22.3\%$

J-4 depth: 15.0'
Gray silty medium to fine SAND (SM)
 $W_n = 13.8\%$

J-5 depth: 20.0'
Gray Silty SAND (SP-SM)

J-6 depth: 34.5' to 36.0'
Gray Silty fine SAND (SM) w/thin Silt LENSES (ML)

BORING T-22
(Jar Samples)

J-1 depth: 1.0'
Brown CLAY (CL) w/hair roots
 $W_n = 26.7\%$

J-2 depth: 5.0'
Brown CLAY (CL) w/hair roots and organic stains
 $W_n = 25.4\%$

J-3 depth: 10.0'
Gray CLAY (CH)
 $W_n = 37.4\%$

BORING T-22 (cont.)

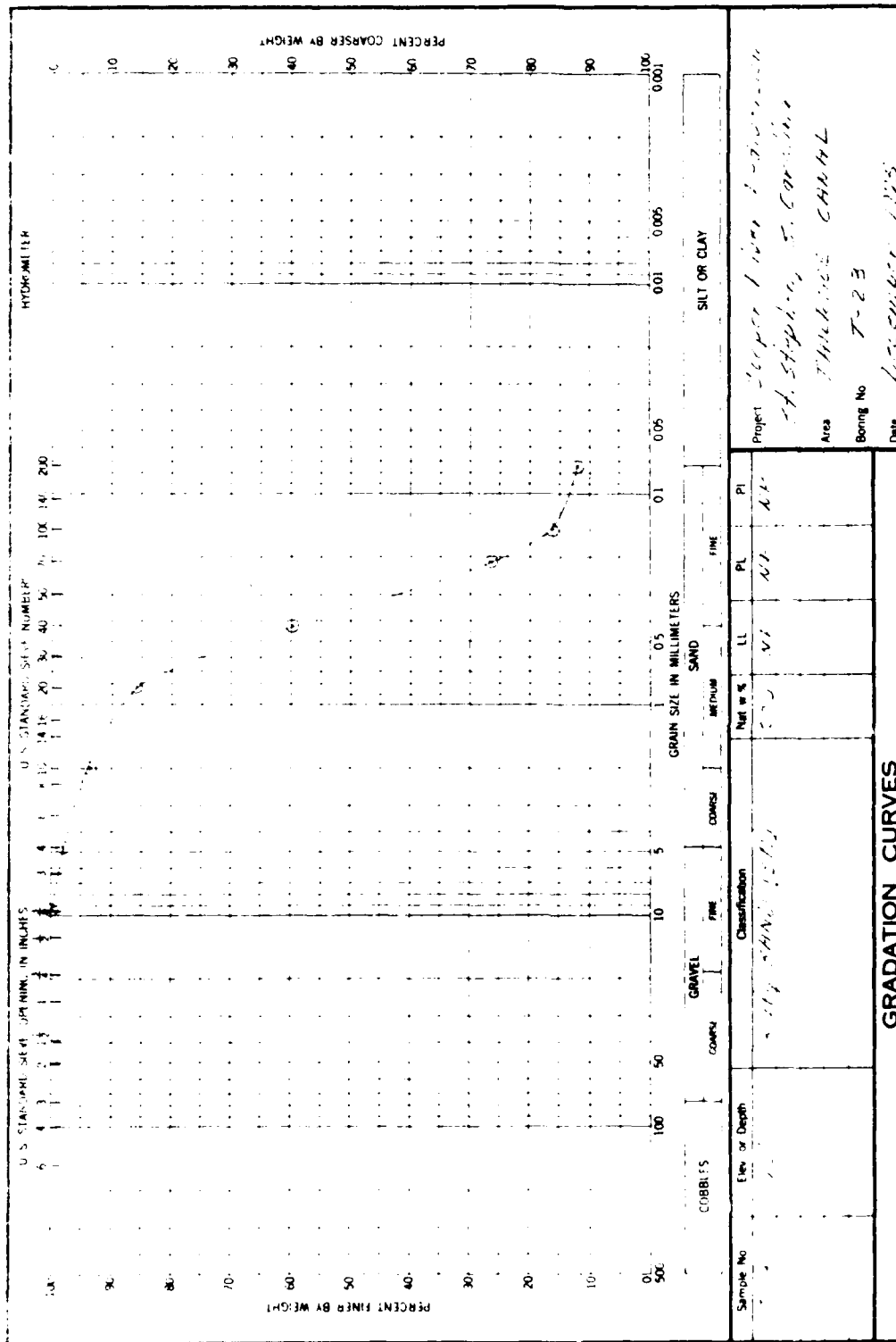
- 2-4 depth: 15.0'
Gray med to fine SAND (SP-SM)
 $W_n = 20.4\%$
- 2-5 depth: 20.0'
Gray Silty fine SAND (SM) w/thin SILT (ML) LENSES

BORING T-23
(Jar Samples)

- 1-1 depth: 1.0'
Gray CLAY (CL) w/organic stains
 $W_n = 23.8\%$
- 1-2 depth: 5.0'
Gray and Brown fine Sandy CLAY (CL)
 $W_n = 13.3\%$
- 1-3 depth: 10.0'
Gray Silty SAND (SM)
 $W_n = 20.5\%$
Non-plastic
- 1-4 depth: 15.0'
Gray Silty Medium to fine SAND (SP-SM)

BORING T-24
(Jar Samples)

- 1-1 depth: 1.0'
Gray Silty fine SAND (SM)
 $W_n = 12.0\%$
- 1-2 depth: 5.0'
Gray Gravelly fine Sandy CLAY (CL)
- 1-3 depth: 7.5 to 8.3'
Gray fine Sandy Silt (ML)
 $W_n = 23.2\%$



T-132 T-30

ENG FORM 2087
MAY 61

BORING T-25
(Jar Samples)

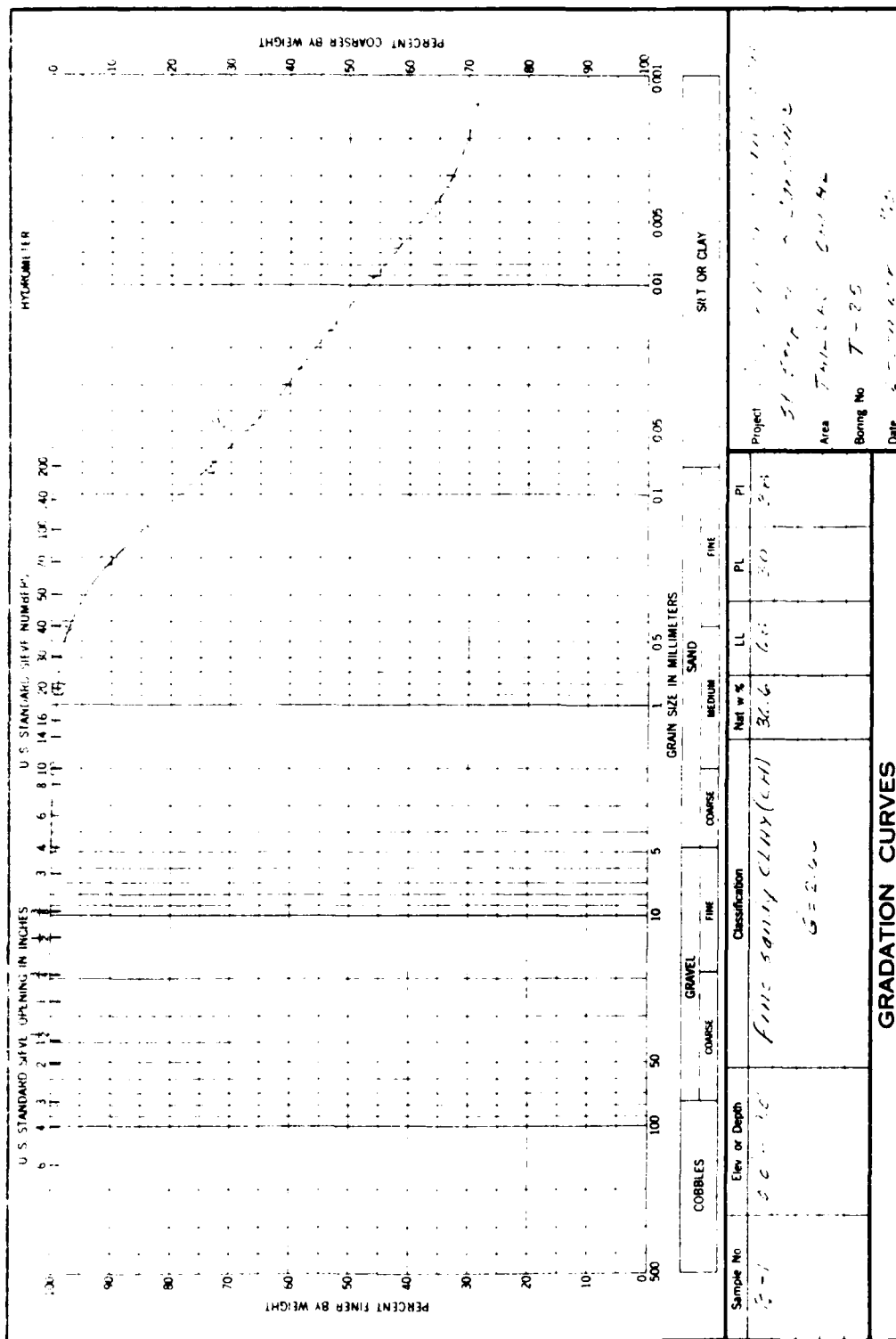
- J-1 depth: 1.0'
Brown fine Sandy CLAY (CL) w/hair roots and organic stains
- J-2 depth: 5.0'
Brown fine Sandy CLAY (CL) w/pieces of roots and organic odor
- J-3 depth: 10.0'
Light Brown Silty fine SAND (SM)
 $w_n = 22.1\%$
- J-4 depth: 15.0'
Light Brown Silty Medium to fine SAND (SP-SM) w/oil ODOR

BORING T-26
(Jar Samples)

- J-1 depth: 1.0'
Brown fine Sandy CLAY (CL) w/hair roots
 $w_n = 30.4\%$
- J-2 depth: 5.0'
Light Brown Silty med to fine SAND (SP-SM)
 $w_n = 21.8\%$
- J-3 depth: 10.0'
Light Brown Silty med to fine SAND (SP-SM)

BORING T-27
(Jar Samples)

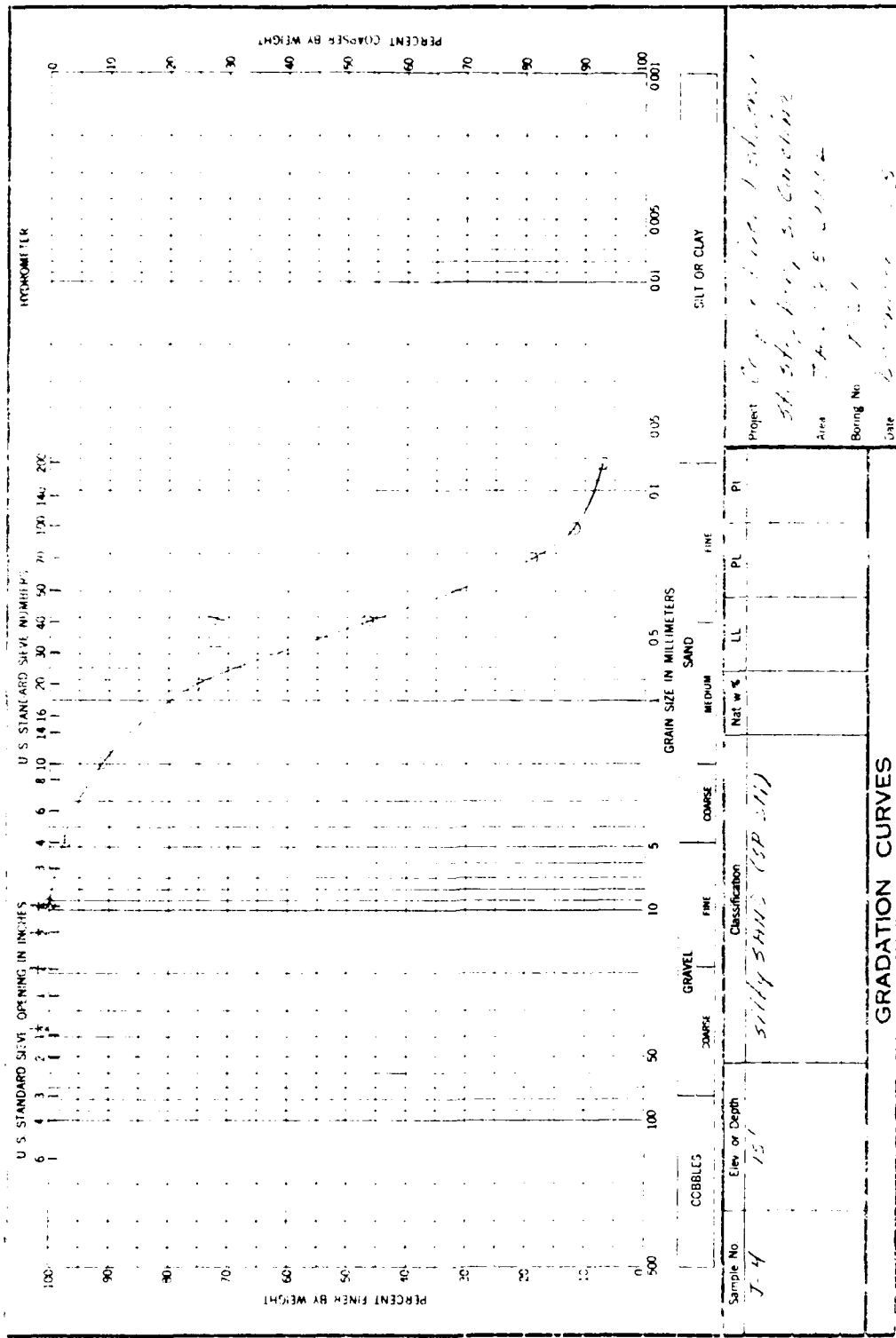
- J-1 depth: 1.0'
Reddish Brown Clayey fine SAND (SC) w/hair roots
 $w_n = 13.7\%$
- J-2 depth: 5.0'
Brown Clayey fine SAND (SC)
- J-3 depth: 10.0'
Brown Silty fine SAND (SM)
- J-4 depth: 15.0'
Light Brown Silty SAND (SP-SM)
 $w_n = 21.4\%$
Non-plastic



GRADATION CURVES

ENG FORM 2087
1 MAY 63

T-134 T-132



T-135 T-13

ENG FORM MAY 01 2007

BORING T-28
(Jar Samples)

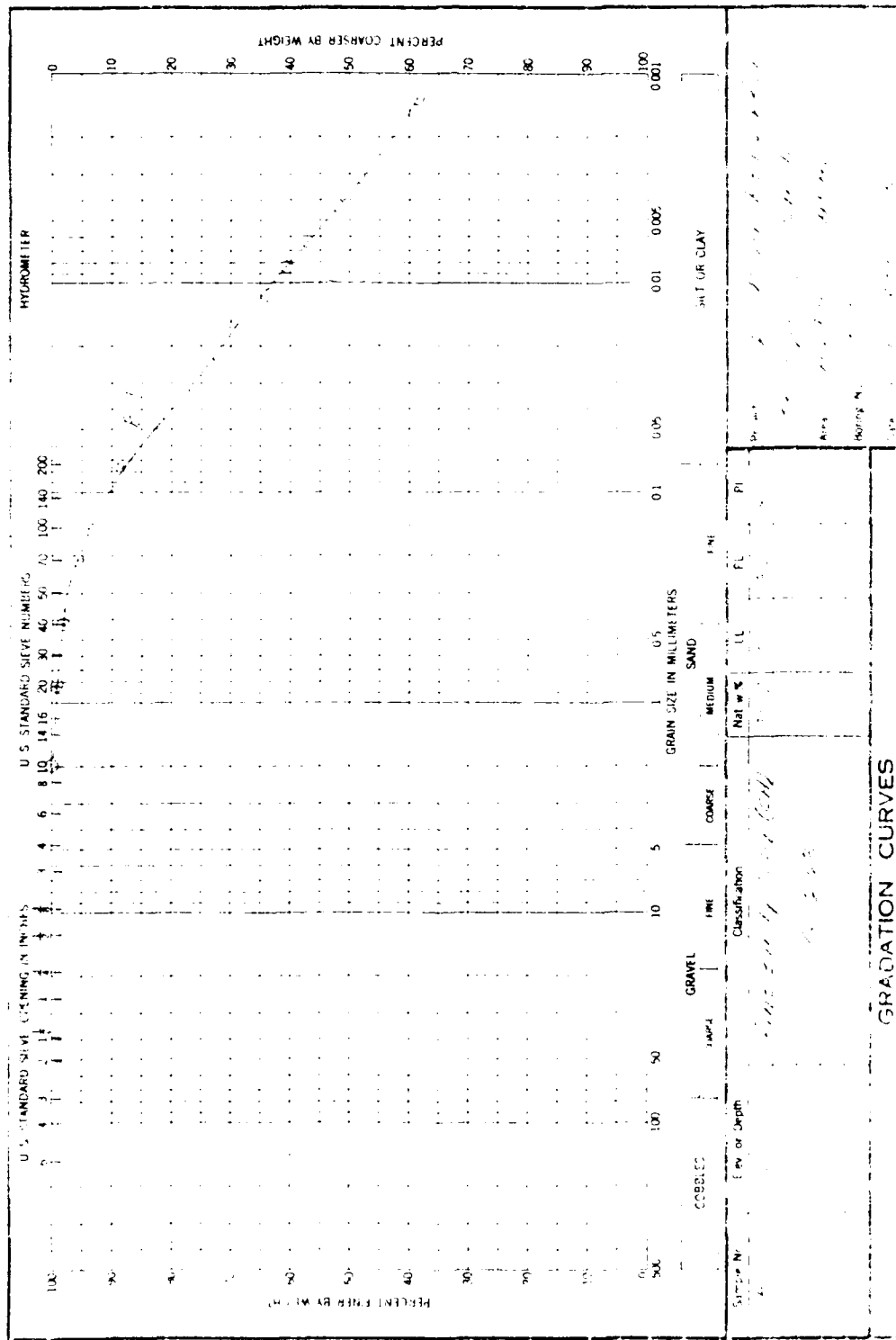
- J-1 depth: 1.0'
Light Brown CLAY (CH)
- J-2 depth: 5.0'
Brown-Grey fine Sandy CLAY (CL)
 $W_n = 19.5\%$
- J-3 depth: 10.0'
Grey Silty medium to fine SAND (SP-SM)
 $W_n = 13.7\%$
- J-4 depth: 15.0'
Grey Silty fine SAND (SM)

BORING T-29
(Jar Samples)

- J-1 depth: 1.0'
Brown fine Sandy CLAY (CH) w/hair roots
- J-2 depth: 5.0'
Brown CLAY (CH)
 $W_n = 32.3\%$
LL = 53
PL = 27
PI = 26
- J-3 depth: 10.0'
Grey CLAY (CH) w/organic stains
- J-4 depth: 15.0'
Dark Grey Clayey fine SAND (SC)
 $W_n = 32.4\%$
- J-5 depth: 20.0'
Dark Grey CLAY (CL) & Silty fine SAND (SM) stratified
 $W_n = 61.5\%$

BORING T-30
(Jar Samples)

- J-1 depth: 1.0'
Brown fine Sandy Clay (CL) w/hair roots
 $W_n = 40.1\%$
- J-2 depth: 5.0'
Brown fine Sandy CLAY (CL) w/hair roots



7-137

ENC 100-100-100

BORING T-30 (cont.)
(Jar Samples)

- J-2 depth: 10.0'
Brown Clayey fine SAND (SC)
 $W_n = 20.7\%$
- J-3 depth: 15.0'
Golden Brown Silty fine SAND (SM)
 $W_n = 17.7\%$
- J-4 depth: 20.0'
Gray Gravelly Silty fine SAND (SM)
 $W_n = 16.1\%$

BORING T-31
(Jar Samples)

- J-1 depth: 0.0 to 5.0'
Brown CLAY (CH) w/organic stains
 $W_n = 11.5\%$
- J-2 depth: 10.0'
Gray CLAY (CH)
 $W_n = 43.6\%$
- J-3 depth: 15.0'
Gray Silty fine SAND (SP-SM)
 $W_n = 18.4\%$
- J-4 depth: 16.0'
Dark Gray CLAY (CH) and Gray Silty fine SAND (SM) stratified
 $W_n = 60.7\%$
- J-5 depth: 27.0'
Gray Silty fine SAND (SP-SM)
- J-6 depth: 30.0'
Gray fine Sandy SILT (ML) w/decomposed shell fragments
- J-7 depth: 36.0'
Gray fine Sandy SILT (ML) w/decomposed shell fragments

BORING T-32
(Jar Samples)

- J-1 depth: 1.0'
Light Brown fine sandy CLAY (CL) w/hair roots
- J-2 depth: 5.0'
Brown-Gray CLAY (CH) w/hair roots
 $W_n = 31.5\%$
- J-3 depth: 10.0'
Brown-Gray CLAY (CH)
- J-4 depth: 12.0'
Gray fine Sandy SILT (MH) w/small roots
 $W_n = 50.2\%$
- J-5 depth: 15.0'
Light Brown Silty medium to fine SAND (SM)
 $W_n = 13.2\%$
- J-6 depth: 20.0'
Gray Silty fine SAND (SM) & Dark Gray CLAY (CL) stratified

BORING T-33
(Jar Samples)

- J-1 depth: 1.0'
Gray CLAY (CH) w/organic Stains
 $W_n = 31.9\%$
- J-2 depth: 5.0'
Gray fine Sandy CLAY (CH) w/small roots and organic stains
 $W_n = 16.6\%$
- J-3 depth: 10.0'
Gray Silty Med to fine SAND (SM)
- J-4 depth: 21.2' to 22.7'
Dark Gray CLAY (CL) & Silty fine Sand (SM) stratified
 $W_n = 60.5\%$

BORING T-34A
(Jar Samples)

- J-1 depth: 1.0'
Brown-Gray fine Sandy CLAY (CL)
 $W_n = 17.6\%$

BORING R-6
(Bag Samples)

B-1 depth 1.5' to 6.0'
Brown Clayey fine SAND (SC) w/hair roots
W_n = 13.0%
LL = 43
PL = 17
PI = 26
O.M.C. = 18.0%
Max. Dry Density = 105.4 pcf.

BORING T-11
(Bag Sample)

B-1 depth: 1.0 to 6.0'
Brown fine Sandy CLAY (CL) w/roots
W_n = 22.4%
LL = 49
PL = 25
PI = 24
O.M.C. = 24.3%
Max. dry density = 95.7 pcf.

BORING T-14
(Bag Sample)

B-1 depth: 1.0 to 6.0'
Dark Brown fine Sandy CLAY (CH) w/roots
LL = 64
PL = 30
PI = 34

BORING T-17
(Bag Sample)

B-1 depth: 0.0 to 5.0'
Brown fine Sandy CLAY (CH) w/roots
W_n = 41.0%
LL = 90
PL = 37
PI = 53
O.M.C. = 34.6%
Max. dry density = 81.0 pcf

BORING T-23
(Bag Sample)

B-1 depth: 1.0 to 5.0
Dark Brown fine Sandy CLAY (CH) w/roots
W_n = 27.1%
LL = 56
PL = 28
PI = 28

BORING T-25
(Bag Sample)

B-1 depth: 0.0 to 9.0
Dark Brown fine Sandy CLAY (CH) w/roots
W_n = 36.6%
LL = 68
PL = 30
PI = 38

BORING T-27
(Bag Sample)

B-1 depth: 0.0 to 9.0'
Golden Brown Clayey Silty fine SAND (SC-SM) w/roots

BORING T-30
(Bag Sample)

B-1 depth: 0.0 to 9.0'
Brown fine Sandy CLAY (CH) w/roots
W_n = 11.1%
LL = 23
PL = 17
PI = 6
O.M.C. = 12.2%
max. dry density = 117.0 pcf

BORINGS T-14, 23, 25, 30
(Bag Samples)

CS #1 (Bags of each boring combined) depth: 0.0'-9.0'
Brown fine Sandy CLAY (CH) w/hair roots
LL = 50
PL = 28
PI = 31
O.M.C. = 27.1%
Max. dry density = 91.5pcf

BORINGS T-11 and T-17
(Bag Samples)

T-11 (Bags of each boring combined) depth: 0.0'-6.0'
Brown fine sandy CLAY (CH) w/hair roots
LL = 57
PL = 27
PI = 30
O.M.C. = 27.8%
Max. dry density = 88.4 pcf

VISUAL CLASSIFICATIONS AND SOIL TEST RESULTS

RAILROAD RELOCATION
COOPER RIVER REDIVERSION
ST. STEPHENS, S. CAROLINA
(CHARLESTON DISTRICT)

BORING R-1
(Jar Samples)

J-1 depth: 1.0'
Brown & Grey medium to fine Sandy CLAY (CL)
Wn = 17.2%
LL = 46
PL = 22
PI = 24

J-2 depth: 5.0'
Grey CLAY (CH) w/organic Stains

J-3 depth: 10.0'
Grey Silty medium to fine SAND (SP-SM)

J-4 depth: 15.0'
Grey Gravelly fine Sandy SILT (MH)
Wn = 32.0%

BORING R-2
(Jar Samples)

J-1 depth: 1.0'
Brown CLAY (CH) w/hair roots & Organic Stains

J-2 depth: 5.0'
Brown Clayey fine SAND (SC)
Wn = 16.3%

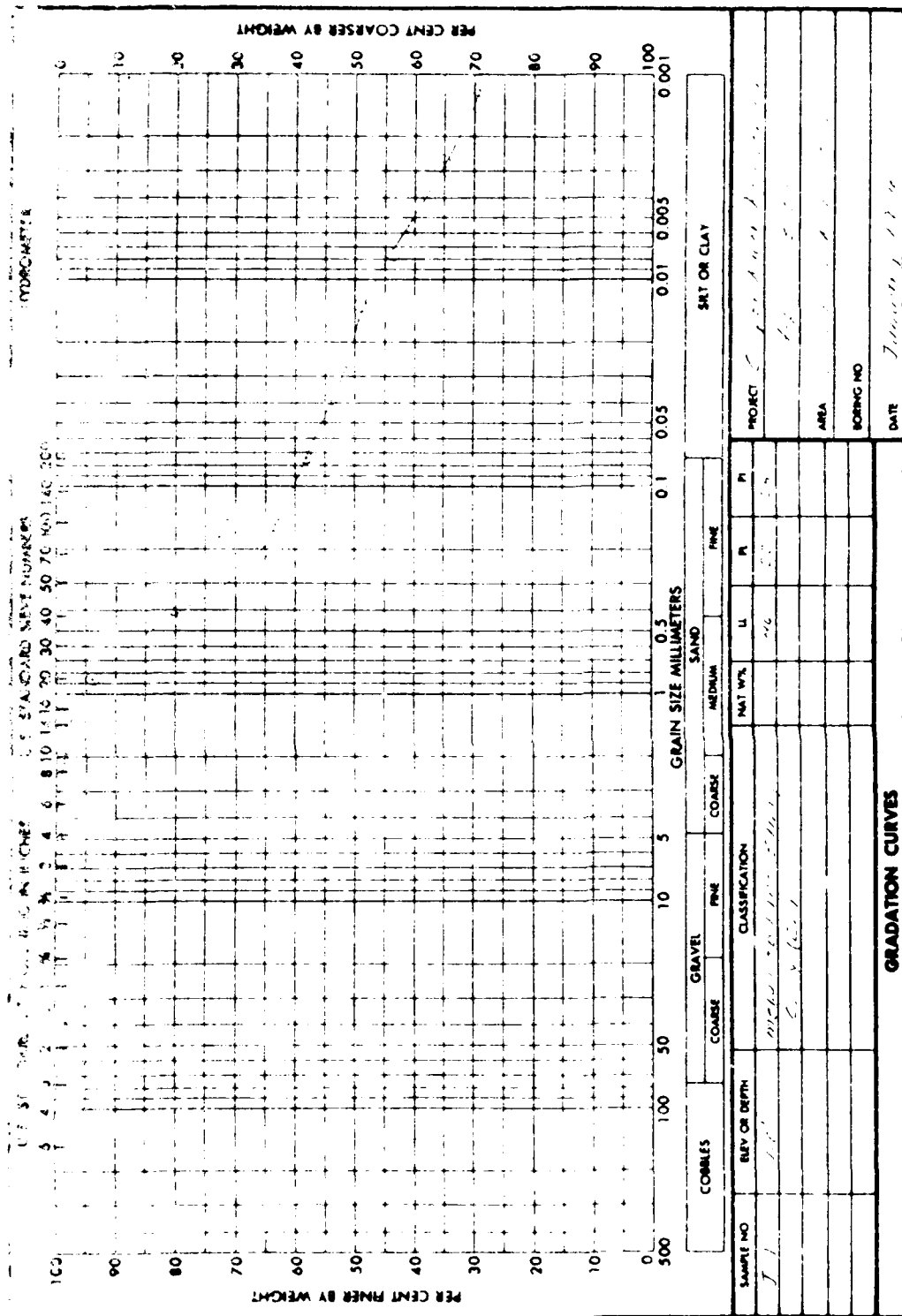
J-3 depth: 10.0'
Grey Silty medium to fine SAND (SP-SM)

BORING R-3
(Jar Samples)

J-1 depth: 0.2'
Brown-Grey fine Sandy CLAY (CH) w/hair roots

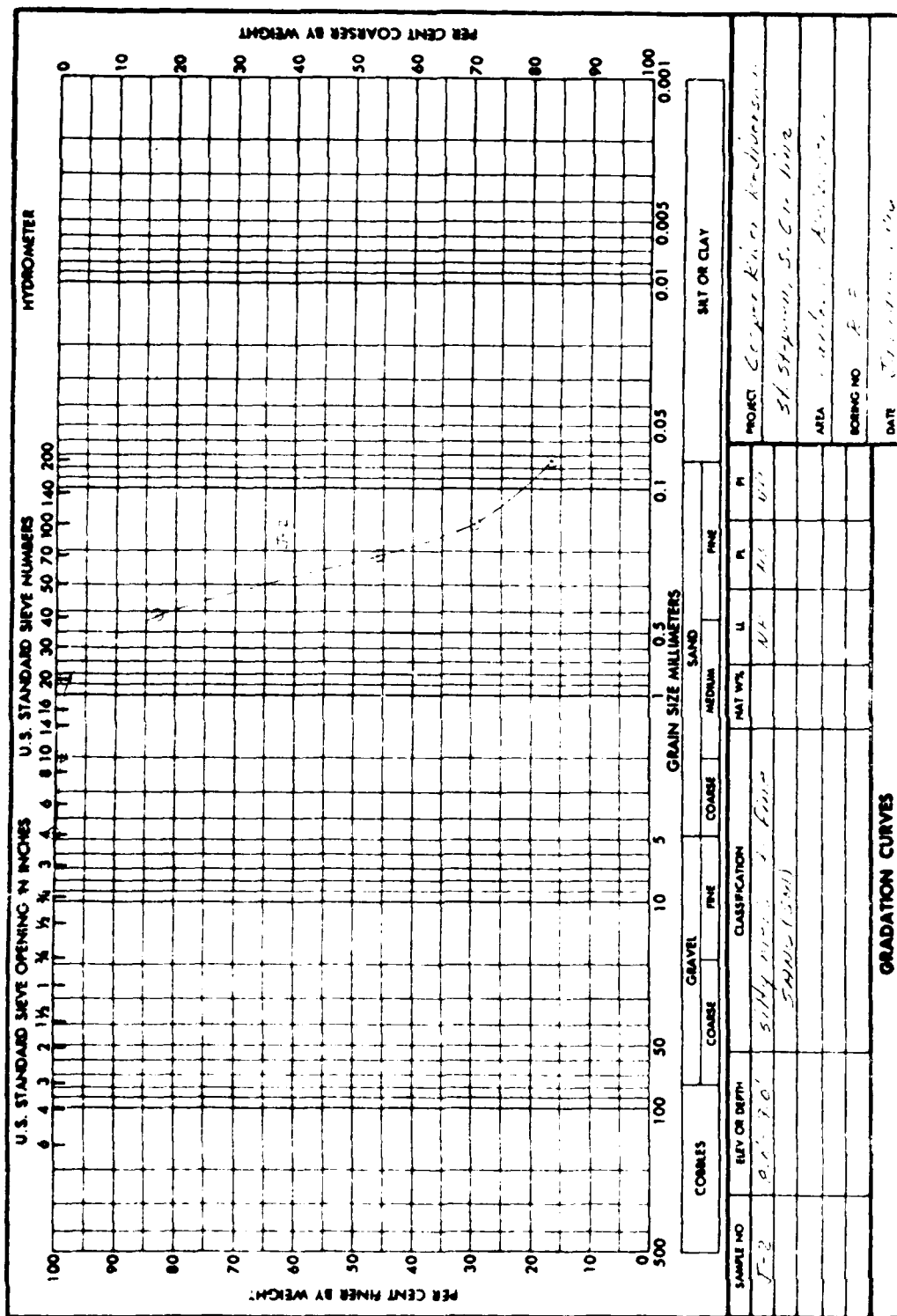
J-2 depth: 8.0' - 9.0'
Grey Silty medium to fine SAND (SM)
Wn = 22.2%

J-3 depth: 12.0'
Grey fine Sandy SILT (ML)



ENGINE FORM 2087
MAY 62
REPLACES WES FORM NO 1241, SEP 1962, WHICH IS OBSOLETE
U S GOVERNMENT PRINTING OFFICE 1962 O - 799-145

T-144 T-141



U.S. GOVERNMENT PRINTING OFFICE: 1963 OF-709-165

ENG FORM 2087 REPLACES WES FORM NO 1241, SEP 1962, WHICH IS OBSOLETE
 1 MAY 63

T-145 T-42

BORING R-4
(Jar Samples)

- 1-1 depth: 5.0'
Grey CLAY (CH) w/Streaks of Organic Stains
- 1-2 depth: 9.0' to 10.0'
Grey CLAY (CH)
Wn = 53.1%
LL = 66
PL = 26
PI = 40
- 1-3 depth: 10.5' to 12.0'
Grey Silty fine SAND (SP-SM)
- 1-4 depth: 15.0'
Grey Silty fine SAND (SM) & Dark Grey CLAY (CH) (stratified)

BORING R-5
(Jar Samples)

- 1-1 depth: 1.0'
Brown CLAY (CH) w/hair roots
- 1-2 depth: 5.0'
Grey Clayey fine SAND (SC)
Wn = 13.3%
LL = 46
PL = 16
PI = 30
- 1-3 depth: 10.0'
Grey Silty fine SAND (SM)
Wn = 20.0%

BORING R-6
(Jar Samples)

- 1-1 depth: 1.0'
Brown Silty fine SAND (SM) w/small roots
Wn = 5.8%
- 1-2 depth: 5.0'
Golden Brown Clayey fine SAND (SC)
Wn = 14.3%
- 1-3 depth: 10.0'
Golden Brown Clayey fine SAND (SP-SC)
- 1-4 depth: 15.0'
Golden Brown Clayey fine SAND (SC)
Wn = 19.0%

T-146 = 143

BORING R-6 (cont.)
(Jar Samples)

J-5 depth: 18.0' to 19.5'
Light Brown Silty fine SAND (SM)

BORING BA-1
(Jar Samples)

J-1 depth: 0.0 to 1.5'
Light Brown Silty fine SAND (SM) w/hair roots
Wn = 3.2%

J-2 depth: 1.5' to 3.0'
Light Brown fine Sandy CLAY (CH)
Wn = 22.0%
LL = 50
PL = 20
PI = 30

J-3 depth: 7.5' to 9.0'
Light Brown Silty fine SAND (SM)
Wn = 8.3%

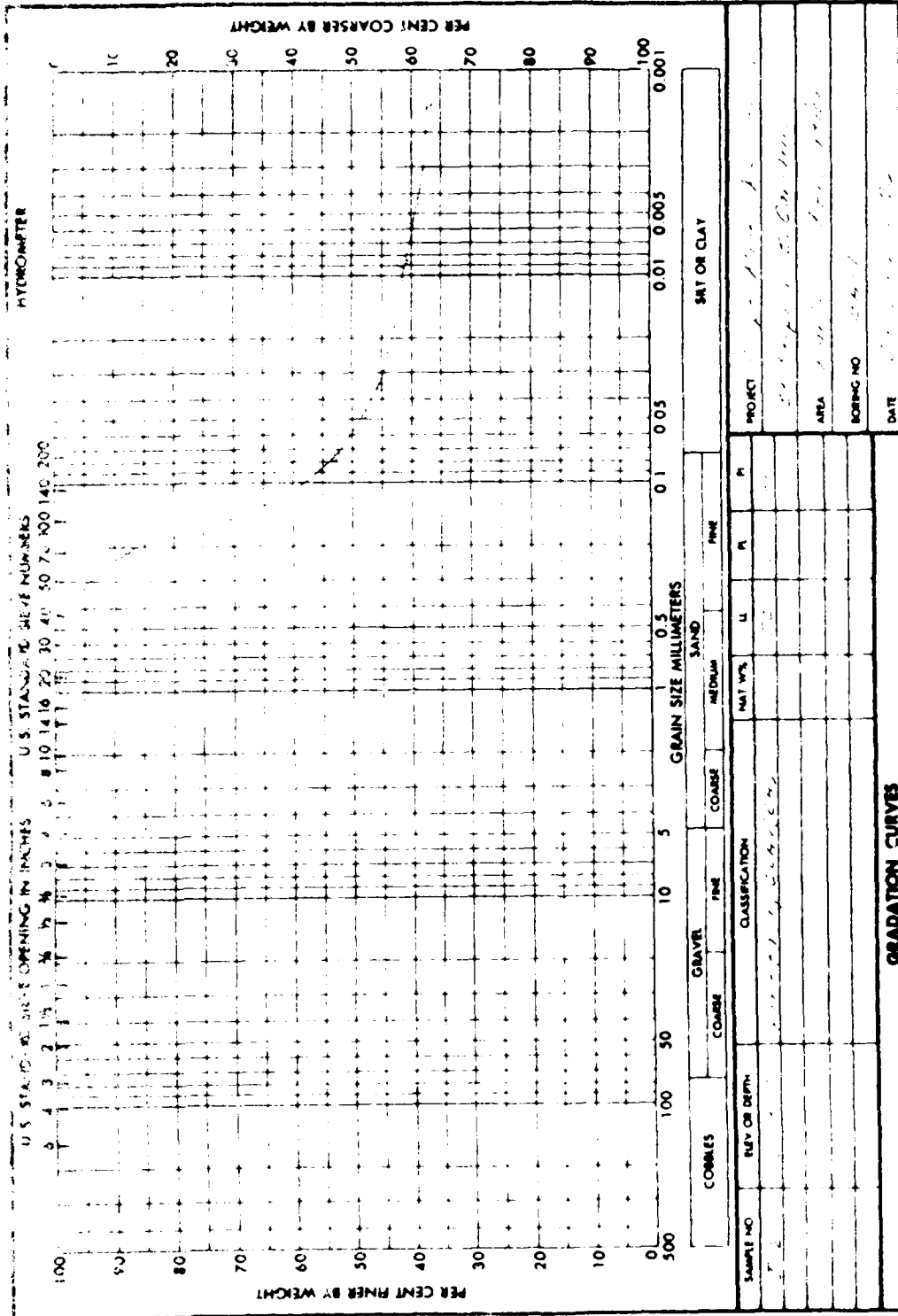
J-4 depth: 15.0' to 16.5'
Light Brown Silty fine SAND (SP-SM)

J-5 depth: 19.5' to 21.0'
Light Brown Silty medium to fine SAND (SP-SM)

J-6 depth: 24.0' to 25.5'
Light Brown Silty Med. to fine SAND (SP-SM)
Wn = 15.6%

J-7 depth: 29.5' to 30.0'
Black CLAY (CH)
Wn = 57.3%

J-8 depth:
Black CLAY (CH)
Wn = 54.4%



ENGINEERING FORM 2087 REPLACES WES FORM NO. 1241, SEP. 1962, WHICH IS OBSOLETE

U.S. GOVERNMENT PRINTING OFFICE: 1962 OF - 700-135

T-148 T-145

BORING BA-1
(Bag Samples)

C-1 depth: 1.5' - 13.0'
Golden Brown Clayey SAND (SC)
LL = 31
PL = 14
PI = 17
G = 2.66

BORING BA-3
(Bag Samples)

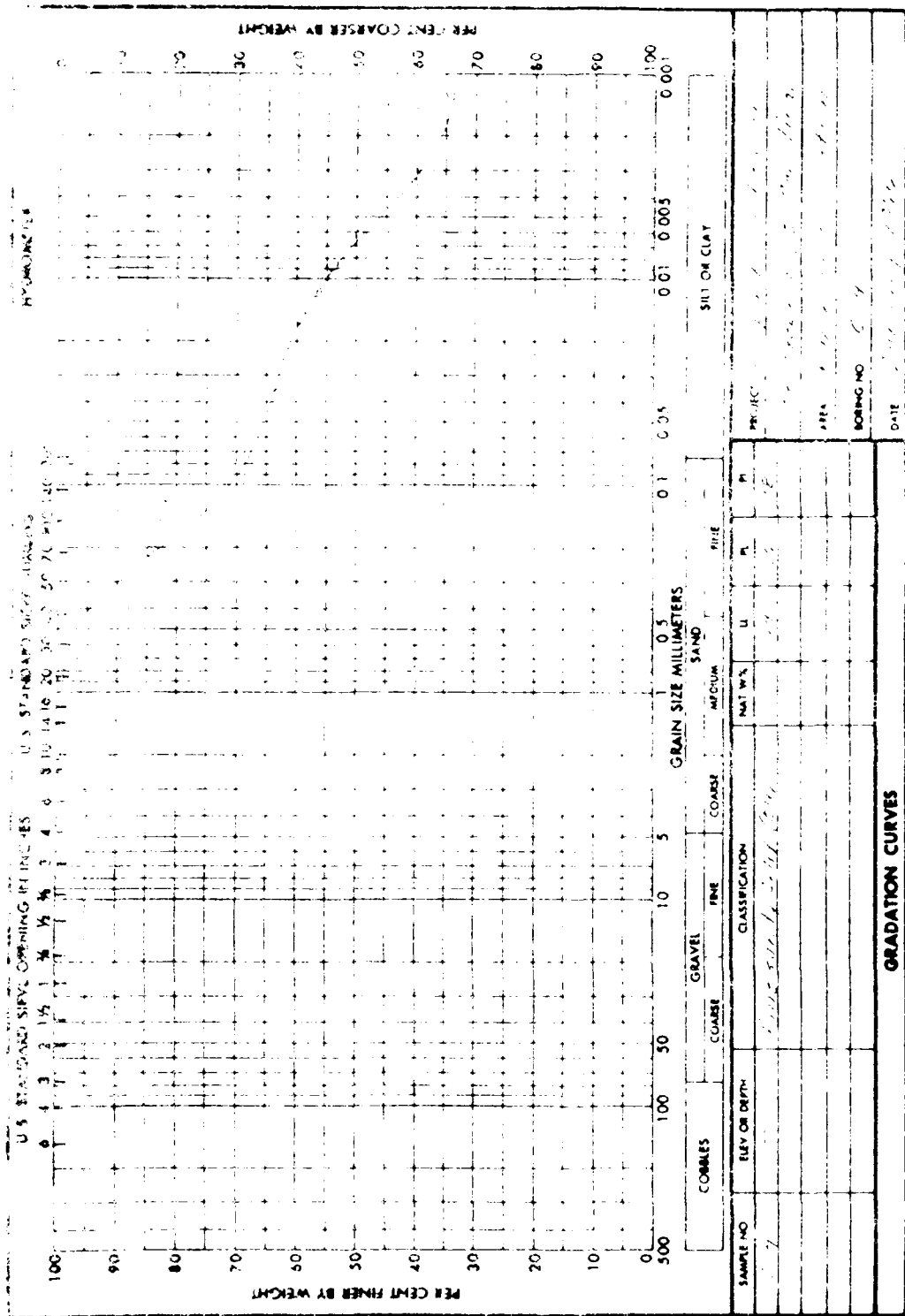
C-2 depth: 3.0' to 15.0'
Golden Brown Clayey SAND (SC-SM)
LL = 23
PL = 17
PI = 6
G = 2.68

BORING RR-1
(Bag Samples)

C-3 depth: 1.0 to 12.0'
Brown Clayey SAND (SC) w/hair roots
LL = 38
PL = 17
PI = 21
G = 2.66

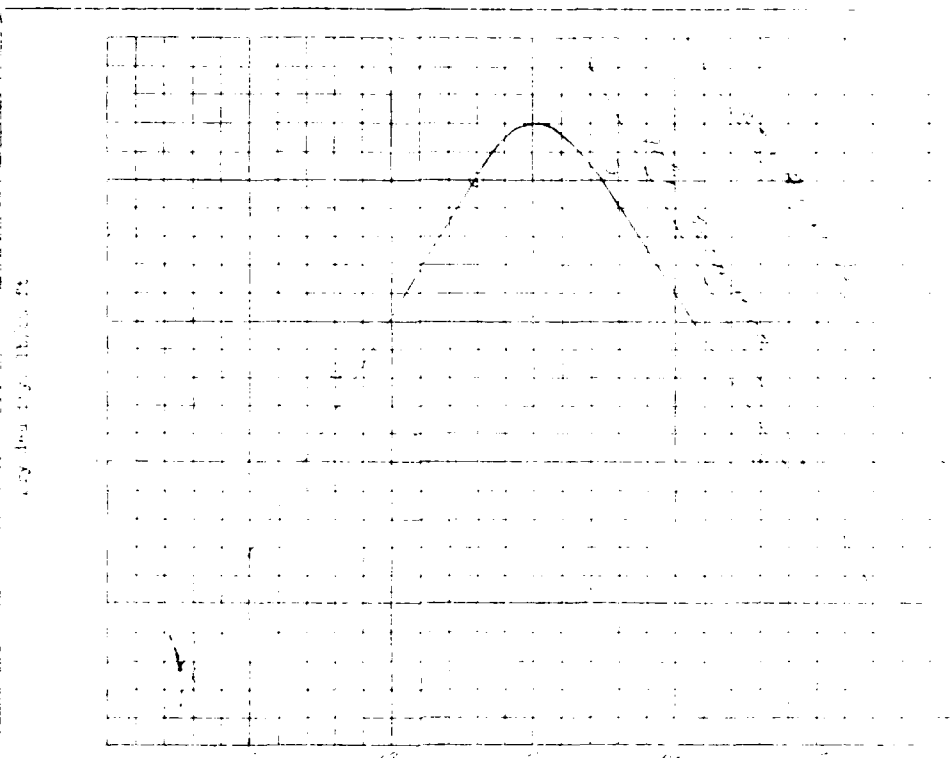
BORING C-4
(Bag Samples)

C-4 depth:
Dark Brown fine Sandy CLAY (CH) w/roots
LL = 64
PL = 26
PI = 38
G = 2.64



ENG FORM 2087 REPLACES WES FORM NO 1241, SEP 1962, WHICH IS OBSOLETE

T-152-129



_____ compaction test
 _____ blows per each of _____ layers, with _____ lb hammer, at _____ inch drop. _____ inch diameter mold

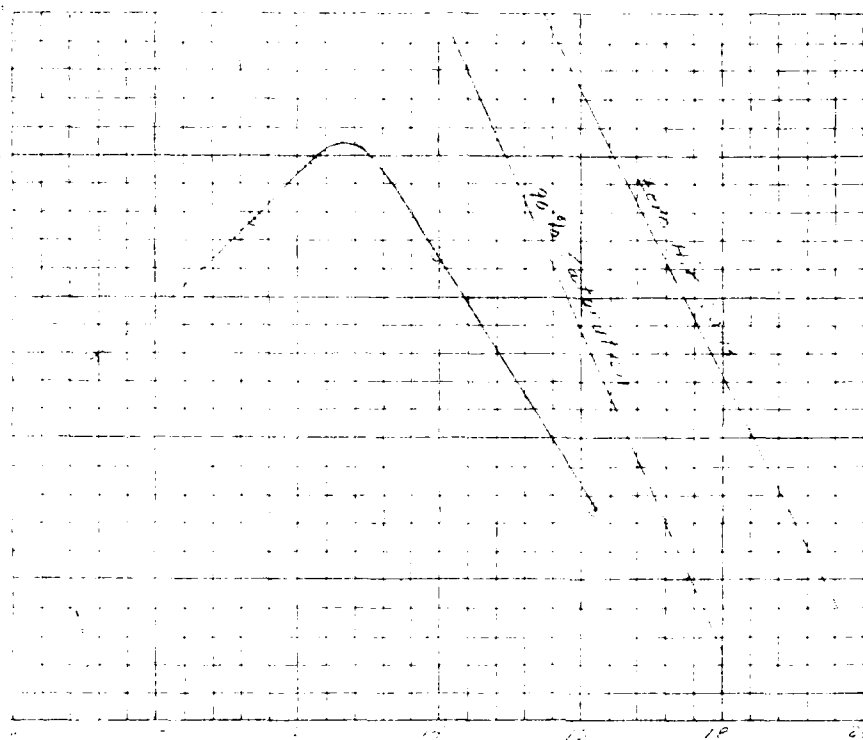
Sample No.	Elev. or Layer	Classification	G	LL	PL	W _p	W _u
1		CL					
2		CL					
3		CL					
4		CL					
5		CL					
6		CL					
7		CL					
8		CL					
9		CL					
10		CL					
11		CL					
12		CL					
13		CL					
14		CL					
15		CL					
16		CL					
17		CL					
18		CL					
19		CL					
20		CL					
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26		CL					
27		CL					
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30		CL					
31		CL					
32		CL					
33		CL					
34		CL					
35		CL					
36		CL					
37		CL					
38		CL					
39		CL					
40		CL					
41		CL					
42		CL					
43		CL					
44		CL					
45		CL					
46		CL					
47		CL					
48		CL					
49		CL					
50		CL					

Sample No. _____
 Natural water content, percent _____
 Optimum water content, percent _____
 Maximum density, lb/cu ft _____
 Remarks _____
 Project _____
 Area _____
 boring No. _____ Date _____

COMPACTION TEST REPORT

THIS FORM IS OBSOLETE AND SHOULD BE REPLACED BY THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS, 1967 EDITION, CHAPTER 10, SECTION 10-1.1.

T-153-50



Water content, percent of dry weight

Page 2 - COMPARISON TEST

blows per inch of _____ layer, with _____ lb rammer and _____ inch drop. _____ inch diameter sand

Sample No.	Elev. or Depth	Classification	G	LL	PL	$\frac{w}{p} >$ No. 4	$\frac{w}{p} >$ 3/4 in.
1	0.00	CLAY, silty, fine sand (20.0%)	24.8	33	15	0	0
2	0.00						
3	0.00						
4	0.00						
5	0.00						
6	0.00						
7	0.00						
8	0.00						
9	0.00						
10	0.00						
11	0.00						
12	0.00						
13	0.00						
14	0.00						
15	0.00						
16	0.00						
17	0.00						
18	0.00						
19	0.00						
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21	0.00						
22	0.00						
23	0.00						
24	0.00						
25	0.00						
26	0.00						
27	0.00						
28	0.00						
29	0.00						
30	0.00						
31	0.00						
32	0.00						
33	0.00						
34	0.00						
35	0.00						
36	0.00						
37	0.00						
38	0.00						
39	0.00						
40	0.00						
41	0.00						
42	0.00						
43	0.00						
44	0.00						
45	0.00						
46	0.00						
47	0.00						
48	0.00						
49	0.00						
50	0.00						
51	0.00						

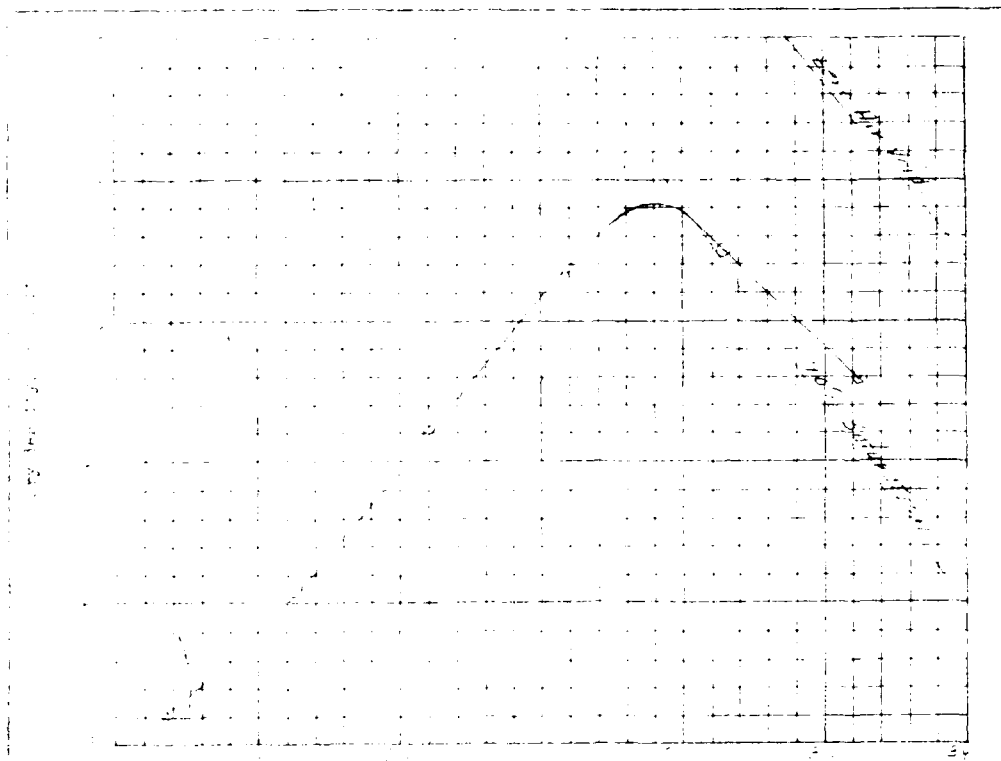
Sample No.	1
Natural water content, per cent	20.0
Optimum water content, per cent	15.0
Max dry density, g/cm ³	1.95
Remarks	Project: <u>Highway 100, 100 ft. wide</u> <u>from 100 ft. to 100 ft.</u> <u>from 100 ft. to 100 ft.</u> Area: <u>100 ft. x 100 ft.</u> Working No.: <u>100 ft. x 100 ft.</u> Date: <u>Jan. 1, 1960</u>

COMPACTION TEST REPORT

COMPACTION TEST REPORT

TRANSLUCENT

F154_{T-151}



Notes: (1) Moisture content of dry weight

(2) Liquid limit expansion test

(3) Liquid limit expansion test (4) Liquid limit expansion test (5) Liquid limit expansion test

(6) Liquid limit expansion test (7) Liquid limit expansion test (8) Liquid limit expansion test

Sample No.	Flow or Depth	Classification	W	LL	PL	% > No. 4	% > 3/4 in.
1		Clayey sand, (SP)	10.4	14	7.6	0	0

Sample No.

Natural water content, percent

Moisture water content, percent

Moisture dry density, lb/cu ft

Remarks

Project

Area

Starting No.

Date

COMPACTION TEST REPORT

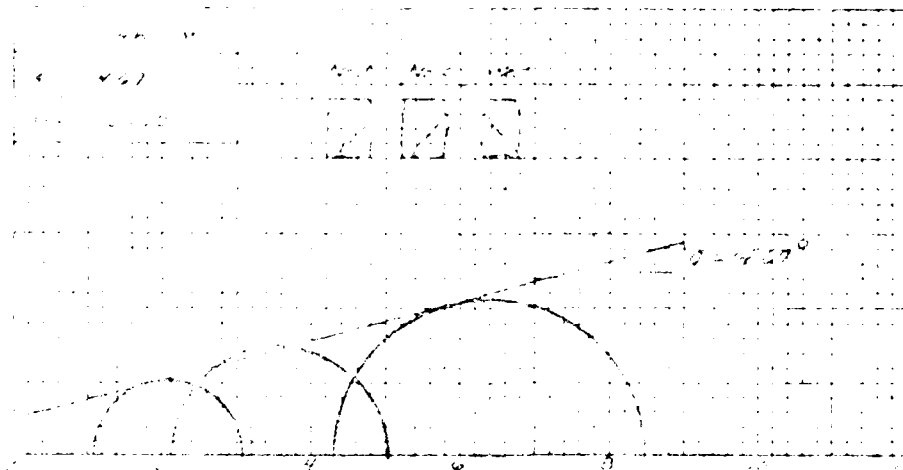
1. This report is to be used for the purpose of determining the maximum dry density and optimum moisture content of a soil for compaction.

2. The test results are to be used for the purpose of determining the maximum dry density and optimum moisture content of a soil for compaction.

3. The test results are to be used for the purpose of determining the maximum dry density and optimum moisture content of a soil for compaction.

T-156-153

Sheet 1 of 2



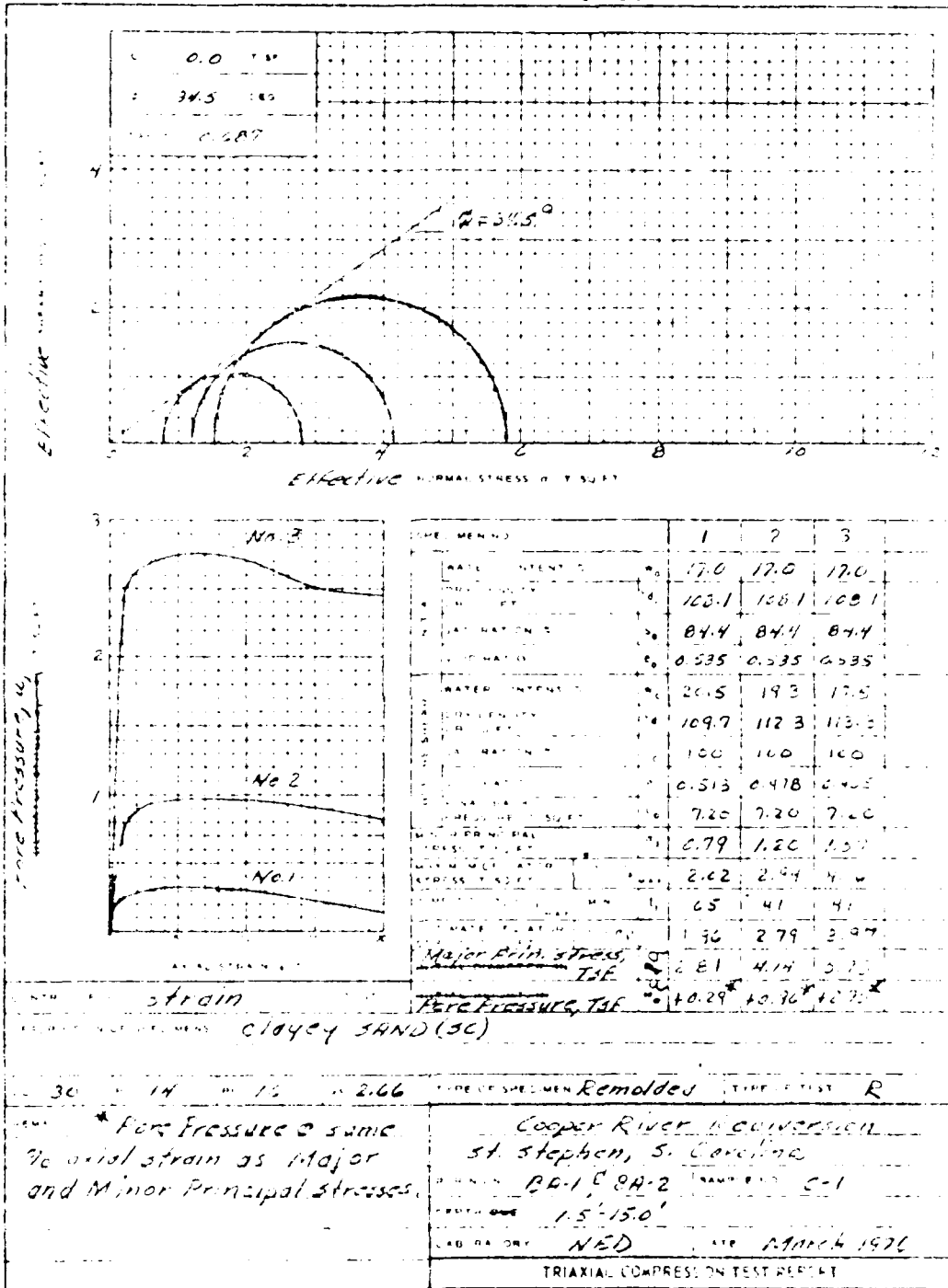
NORMAL STRESS (LBS/IN²)

TEST NUMBER	1	2	3
AXIAL STRESS (LBS/IN ²)	170	170	170
AXIAL STRAIN (%)	0.01	0.01	0.01
AXIAL STRESS (LBS/IN ²)	844	844	844
AXIAL STRAIN (%)	0.035	0.035	0.035
AXIAL STRESS (LBS/IN ²)	165	193	165
AXIAL STRAIN (%)	0.075	0.075	0.075
AXIAL STRESS (LBS/IN ²)	170	170	170
AXIAL STRAIN (%)	0.54	0.46	0.905
AXIAL STRESS (LBS/IN ²)	220	220	220
AXIAL STRAIN (%)	1.48	2.16	4.87
AXIAL STRESS (LBS/IN ²)	262	294	4.16
AXIAL STRAIN (%)	65	41	41
AXIAL STRESS (LBS/IN ²)	1.96	2.79	3.97
AXIAL STRAIN (%)	1.42	1.42	1.42
AXIAL STRESS (LBS/IN ²)	3.15	3.15	3.15

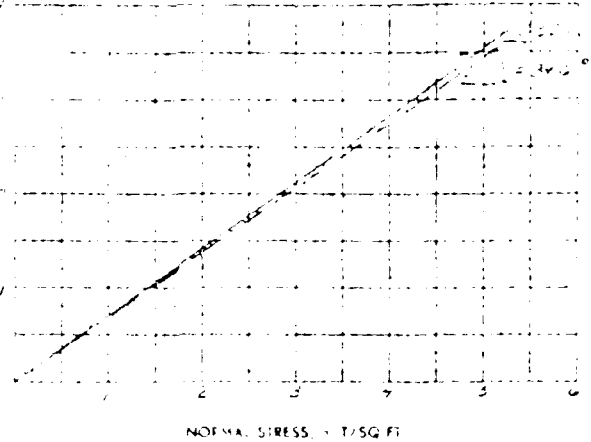
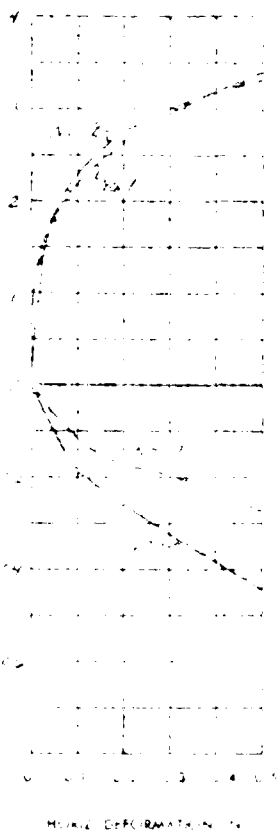
1. 170 0.01 262 0.035
 2. 170 0.01 294 0.075
 3. 170 0.01 4.16 0.905
 4. 220 1.48 2.16 4.87
 5. 262 65 2.79 41
 6. 294 41 3.97 41
 7. 4.16 41 1.42
 8. 1.42 1.42 1.42
 9. 3.15 3.15 3.15

COOPER RIVER DIVERSION
 ST. STEPHEN, S. CAROLINA
 HA-1524-2
 NED
 11/24/1970

T-158-155



T-159 T-156



SHEAR STRENGTH PARAMETERS

$\phi = 34.6^\circ$
 $c = 0.075$
 $\sigma' = 0.0$

	1	2
WATER CONTENT	120.0	120.0
LIQUIDITY INDEX	0.536	0.536
SATURATION	84.4%	84.4%
SHRINKAGE	108.1	108.1
VOLUME RATIO AFTER	0.469	0.452
WATER RATIO AFTER	0.5	0.5
WATER CONTENT	10.2%	16.5%
LIQUIDITY INDEX	0.274	0.375
SHRINKAGE	100	100
SHRINKAGE	4.85	4.60
SHRINKAGE	3.40*	3.31*
SHRINKAGE	60	60
RATE OF STRAIN	0.0083	0.0083
ULTIMATE SHEAR	—	—

TEST SPECIMEN: *Remolded*** 3.0 IN SQUARE 0.50 IN THICK
 SOIL: *CLAY-4 SAND (SC)*
 TEST NO: *10* 2.00

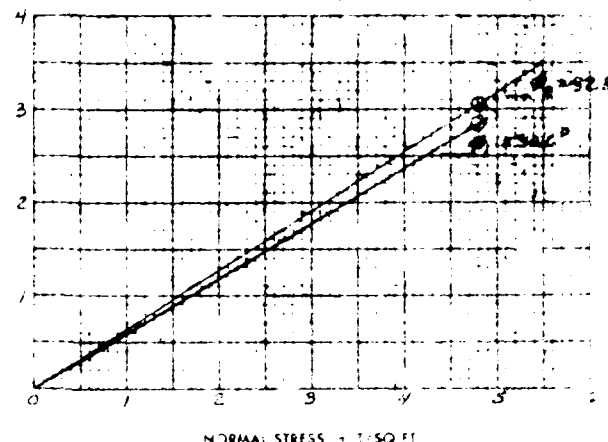
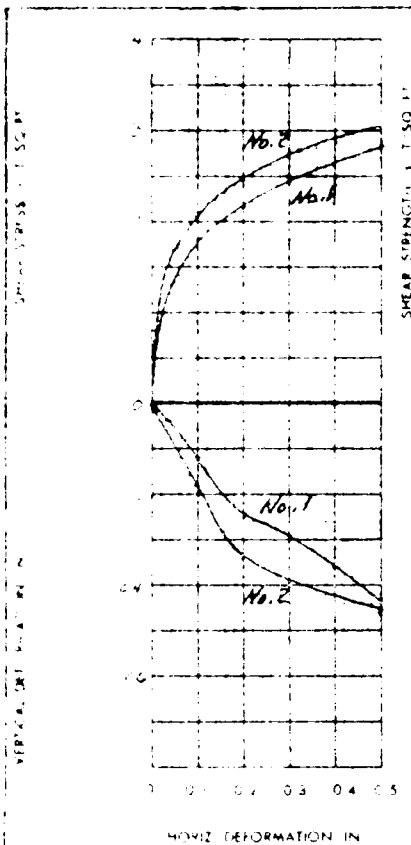
Stress 20.5 Horizontal deformation
*** Samples molded @ moisture content of 120% (L.L. + 2%) and compacted at 95% maximum density.*

Cooper River Rediversion, Charleston, S. Carolina
Railroad Relocation
BA-1, BA-2
March 1976

DIRECT SHEAR TEST REPORT

END PAGE 2094

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SHEAR STRENGTH PARAMETERS

30.6
0.590
0.00

TEST NO.	1	2
WATER CONTENT	14.0%	14.0%
VOID RATIO	0.535	0.535
SATURATION	29.6%	29.6%
DRY DENSITY	108.1	108.1
VOID RATIO AFTER CONSOLIDATION	0.450	0.487
TIME FOR 50 PERCENT CONSOLIDATION MIN.	0.5	0.5
WATER CONTENT	16.6%	16.5%
VOID RATIO	0.367	0.378
SATURATION	100%	100%
NORMAL STRESS	4.80	4.80
MAXIMUM SHEAR STRESS	2.83*	3.06*
ACTUAL TIME TO FAILURE MIN.	60	60
RATE OF STRAIN IN MIN.	0.0083	0.0083
ULTIMATE SHEAR STRESS		

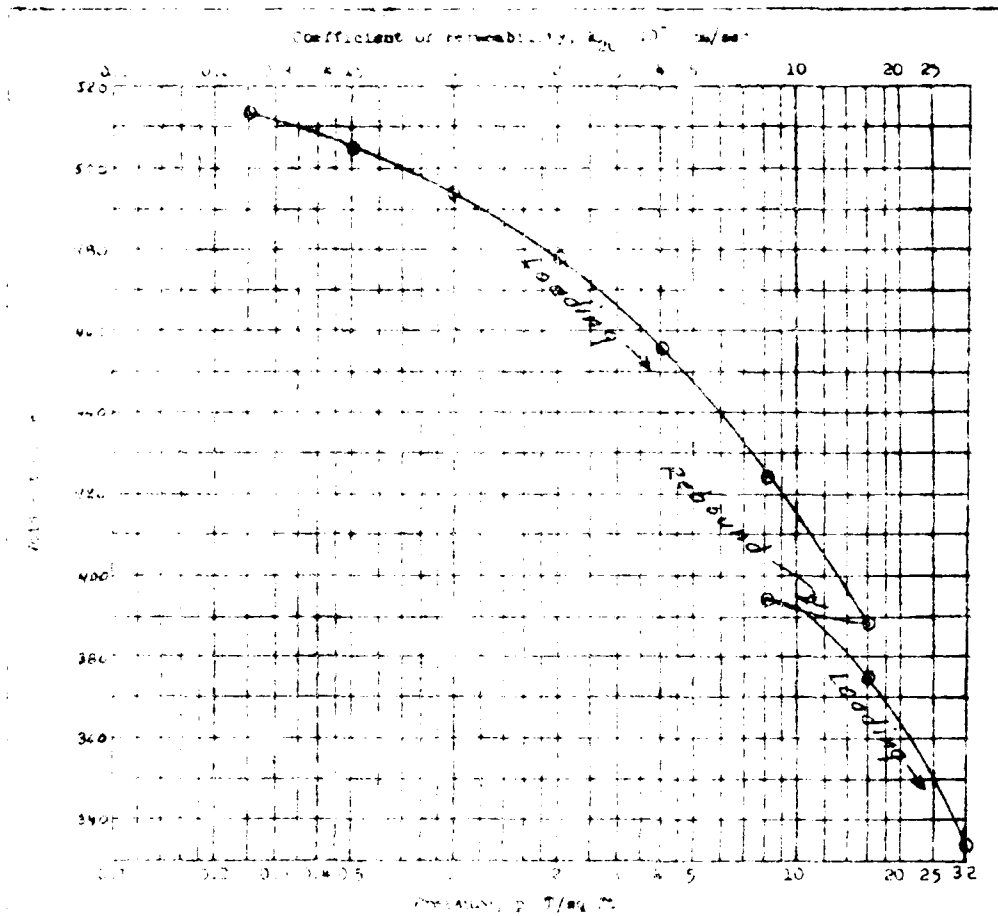
☐ UNCONSOLIDATED STRESS
☒ CONSOLIDATED STRESS

TYPE OF SPECIMEN: Rectangular **
CLASSIFICATION: clayey SAND (SC)
PI: 30 PL: 14 PI: 16 PL: 20

REMARKS: Stress @ 0.50" horizontal deformation.
* * *
Samples molded @ approx. moisture content of 14.0% (p.m.) and dry density of 108.1 Pcf. (45% maximum density)

PROJECT: Cooper River Rediversion
St. Stephen, S. Carolina
AREA: Railroad Relocation
SAMPLING NO: BA-1 & BA-2
DEPTH: 1.5' - 15.0'
DATE: March 1970

DIRECT SHEAR TEST REPORT



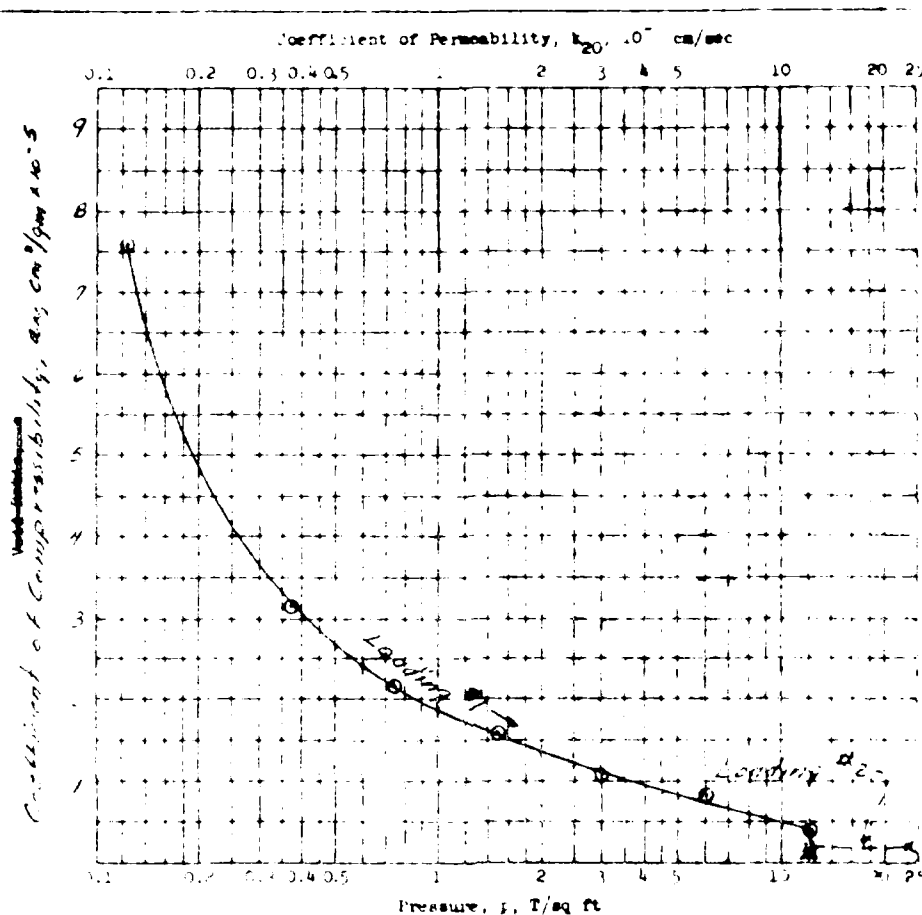
Type of Specimen: <i>Remolded</i>		Before Test		After Test	
Diam. <i>1.45</i> in.	Ht. <i>1.0</i> in.	Water Content, w_0	<i>16.9</i> %	w_f	<i>12.6</i> %
Overburden Pressure, p_0	T/sq ft	Void Ratio, e_0	<i>0.537</i>	e_f	<i>0.534</i>
Preconsol. Pressure, p_c	T/sq ft	Saturation, S_0	<i>84.4</i> %	S_f	<i>100</i> %
Compression Index, C_c	<i>0.12</i>	Dry Density, γ_d	<i>108.4</i> lb/ft ³		
Classification: <i>clayey SAND (SC)</i>		k_{90} at $e_0 =$ $\times 10^{-7}$ cm/sec			
L_c <i>30</i>	G_s <i>2.66</i>	Project <i>Cooper River Rediversion</i>			
P_L <i>14</i>	P_{10}	<i>St. Stephen, S. Carolina</i>			
Remarks: <i>Sample molded @ moisture</i>		Area <i>RAILROAD RELOCATION</i>			
<i>compact of 12.6% (0.716 18%)</i>		Boxing No. <i>AA-1 / EA-2</i>	Sample No. <i>C-1</i>		
<i>and dry density of 108.1 pcf</i>		Depth <i>1.5' - 15.0'</i>	Date <i>March 1976</i>		
<i>(95% maximum density)</i>		CONSOLIDATION TEST REPORT			

95% FORM 1970 PREVIOUS EDITIONS ARE OBSOLETE

sheet 1 of 2

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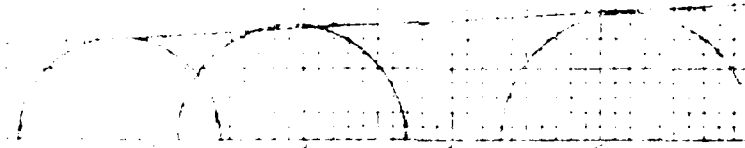
Type of Specimen <i>Remolded</i>				Before Test		After Test	
Diam	<i>4.45 in.</i>	H	<i>1.0 in.</i>	Water Content, w_0	<i>16.9 %</i>	w_1	<i>12.6 %</i>
Overburden Pressure, P_0		T/sq ft		Void Ratio, e_0	<i>0.532</i>	e_1	<i>0.334</i>
Preconsolidation Pressure, P_c		T/sq ft		Saturation, S_0	<i>84.4 %</i>	S_1	<i>100 %</i>
Compression Index, C_c	<i>0.12</i>			Dry Density, γ_d	<i>108.4 lb/ft³</i>		
Classification	<i>CLAY SAND (SC)</i>			k_{20} at $e_0 =$ <i>0.532</i> $\times 10^{-7}$ cm/sec			
σ_1	<i>30</i>	σ_3	<i>2.66</i>	Project <i>Cooper River Rediversion</i>			
PL	<i>14</i>			<i>St. Stephen, S. Carolina</i>			
Remarks <i>See test notes for moisture content of 17.0% (o.m.c. + 3%) and dry density of 108.1 lb/ft³ (95% maximum density)</i>				Area <i>RAILROAD RELOCATION</i>			
				Poring No.	<i>BA-15 BA-2</i>	Sample No.	<i>C-1</i>
				Depth	<i>1.5' - 15.0'</i>	Date	<i>MARCH 1976</i>
CONSOLIDATION TEST REPORT							

ENG FORM 2090
1 MAY 61

PREVIOUS EDITIONS ARE OBSOLETE

sheet 2 of 2

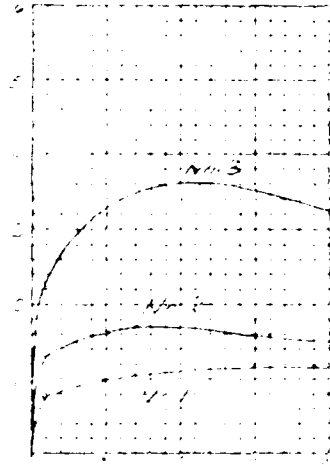
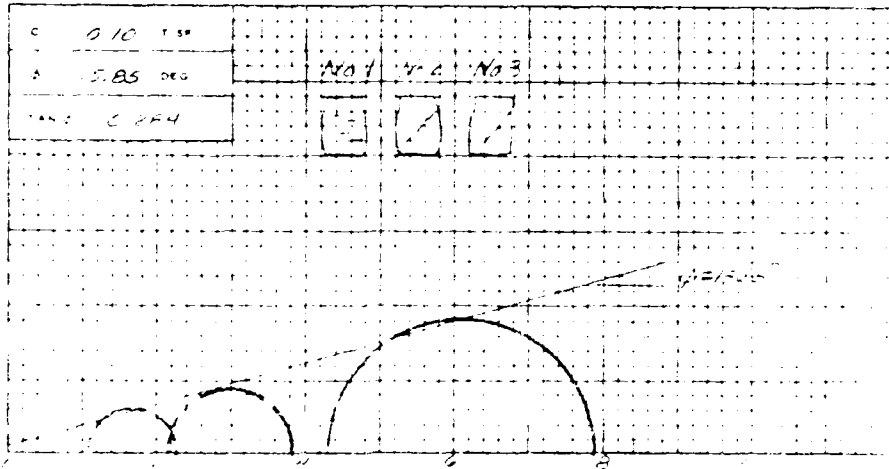
T-163
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[illegible]

1. $\frac{1}{2} \text{ mole } \text{H}_2\text{O} = 9 \text{ g}$
 2. $\frac{1}{2} \text{ mole } \text{H}_2\text{O} = 9 \text{ g}$
 3. $\frac{1}{2} \text{ mole } \text{H}_2\text{O} = 9 \text{ g}$
 4. $\frac{1}{2} \text{ mole } \text{H}_2\text{O} = 9 \text{ g}$
 5. $\frac{1}{2} \text{ mole } \text{H}_2\text{O} = 9 \text{ g}$
 6. $\frac{1}{2} \text{ mole } \text{H}_2\text{O} = 9 \text{ g}$
 7. $\frac{1}{2} \text{ mole } \text{H}_2\text{O} = 9 \text{ g}$
 8. $\frac{1}{2} \text{ mole } \text{H}_2\text{O} = 9 \text{ g}$
 9. $\frac{1}{2} \text{ mole } \text{H}_2\text{O} = 9 \text{ g}$
 10. $\frac{1}{2} \text{ mole } \text{H}_2\text{O} = 9 \text{ g}$

TYPE OF TEST *Remitted* **RR** TYPE OF TEST **Q**
 SUBJECT *Copper River Rediversion*
St. Stephen, S. Carolina
 C-4 SAMPLE NO. *C-4*
 —
 NED DATE *March 1976*
 ANALYSIS COMPRESSION TEST REPORT

T-164



TEST NUMBER	1	2	3
WATER CONTENT %	32.7	32.3	33.0
DENSITY g/cc	895	820	830
SATURATION %	874	846	844
DATE	10/4	10/9	10/9
WATER CONTENT %	32.4	33.5	31.7
DENSITY g/cc	822	824	802
SATURATION %	100	100	100
DATE	10/11	10/11	10/11
WATER CONTENT %	32.0	32.0	32.0
DENSITY g/cc	820	820	820
SATURATION %	100	100	100
DATE	10/11	10/11	10/11
WATER CONTENT %	31.8	31.8	31.8
DENSITY g/cc	820	820	820
SATURATION %	100	100	100
DATE	10/11	10/11	10/11

AXIAL STRESS (lb/sq ft)

AXIAL STRAIN (%)

64 20 36 100

Sample No. 1 is from 1st test.

Sample No. 2 is from 2nd test.

Sample No. 3 is from 3rd test.

Sample No. 4 is from 4th test.

Sample No. 5 is from 5th test.

Sample No. 6 is from 6th test.

Sample No. 7 is from 7th test.

Sample No. 8 is from 8th test.

Sample No. 9 is from 9th test.

Sample No. 10 is from 10th test.

Sample No. 11 is from 11th test.

Sample No. 12 is from 12th test.

Sample No. 13 is from 13th test.

Sample No. 14 is from 14th test.

Sample No. 15 is from 15th test.

Sample No. 16 is from 16th test.

Sample No. 17 is from 17th test.

Sample No. 18 is from 18th test.

Sample No. 19 is from 19th test.

Sample No. 20 is from 20th test.

Sample No. 21 is from 21st test.

Sample No. 22 is from 22nd test.

Sample No. 23 is from 23rd test.

Sample No. 24 is from 24th test.

Sample No. 25 is from 25th test.

Sample No. 26 is from 26th test.

Sample No. 27 is from 27th test.

Sample No. 28 is from 28th test.

Sample No. 29 is from 29th test.

Sample No. 30 is from 30th test.

Sample No. 31 is from 31st test.

Sample No. 32 is from 32nd test.

Sample No. 33 is from 33rd test.

Sample No. 34 is from 34th test.

Sample No. 35 is from 35th test.

Sample No. 36 is from 36th test.

Sample No. 37 is from 37th test.

Sample No. 38 is from 38th test.

Sample No. 39 is from 39th test.

Sample No. 40 is from 40th test.

Sample No. 41 is from 41st test.

Sample No. 42 is from 42nd test.

Sample No. 43 is from 43rd test.

Sample No. 44 is from 44th test.

Sample No. 45 is from 45th test.

Sample No. 46 is from 46th test.

Sample No. 47 is from 47th test.

Sample No. 48 is from 48th test.

Sample No. 49 is from 49th test.

Sample No. 50 is from 50th test.

Sample No. 51 is from 51st test.

Sample No. 52 is from 52nd test.

Sample No. 53 is from 53rd test.

Sample No. 54 is from 54th test.

Sample No. 55 is from 55th test.

Sample No. 56 is from 56th test.

Sample No. 57 is from 57th test.

Sample No. 58 is from 58th test.

Sample No. 59 is from 59th test.

Sample No. 60 is from 60th test.

Sample No. 61 is from 61st test.

Sample No. 62 is from 62nd test.

Sample No. 63 is from 63rd test.

Sample No. 64 is from 64th test.

Sample No. 65 is from 65th test.

Sample No. 66 is from 66th test.

Sample No. 67 is from 67th test.

Sample No. 68 is from 68th test.

Sample No. 69 is from 69th test.

Sample No. 70 is from 70th test.

Sample No. 71 is from 71st test.

Sample No. 72 is from 72nd test.

Sample No. 73 is from 73rd test.

Sample No. 74 is from 74th test.

Sample No. 75 is from 75th test.

Sample No. 76 is from 76th test.

Sample No. 77 is from 77th test.

Sample No. 78 is from 78th test.

Sample No. 79 is from 79th test.

Sample No. 80 is from 80th test.

Sample No. 81 is from 81st test.

Sample No. 82 is from 82nd test.

Sample No. 83 is from 83rd test.

Sample No. 84 is from 84th test.

Sample No. 85 is from 85th test.

Sample No. 86 is from 86th test.

Sample No. 87 is from 87th test.

Sample No. 88 is from 88th test.

Sample No. 89 is from 89th test.

Sample No. 90 is from 90th test.

Sample No. 91 is from 91st test.

Sample No. 92 is from 92nd test.

Sample No. 93 is from 93rd test.

Sample No. 94 is from 94th test.

Sample No. 95 is from 95th test.

Sample No. 96 is from 96th test.

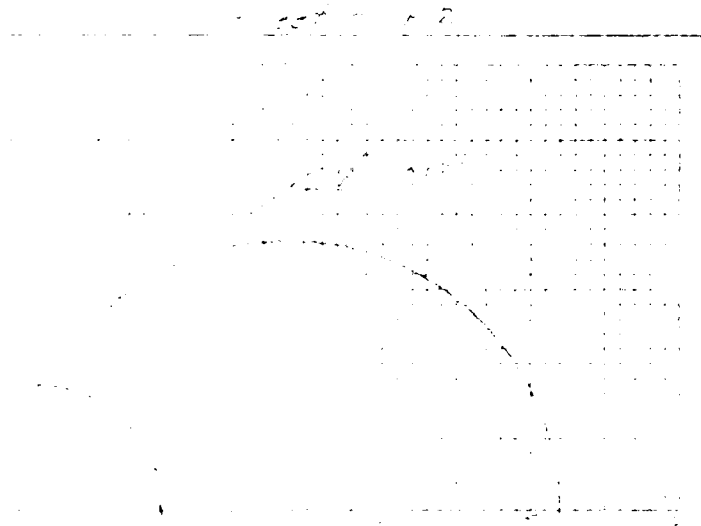
Sample No. 97 is from 97th test.

Sample No. 98 is from 98th test.

Sample No. 99 is from 99th test.

Sample No. 100 is from 100th test.

T-165

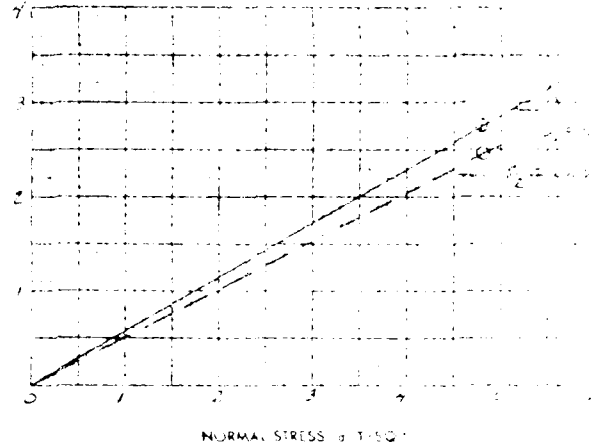
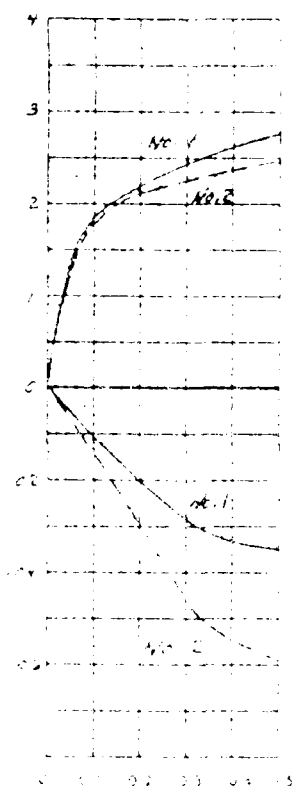


The following table shows the results of the tests conducted on the various specimens of the material under consideration. The data is presented in a tabular form for clarity.

Specimen No.	Test No.	Load (lb.)	Deflection (in.)	Modulus of Elasticity (psi)
1	1	100	0.001	10,000,000
2	2	200	0.002	10,000,000
3	3	300	0.003	10,000,000
4	4	400	0.004	10,000,000
5	5	500	0.005	10,000,000
6	6	600	0.006	10,000,000
7	7	700	0.007	10,000,000
8	8	800	0.008	10,000,000
9	9	900	0.009	10,000,000
10	10	1000	0.010	10,000,000

The above table shows that the material under consideration exhibits a linear relationship between load and deflection up to a load of 1000 lb. Beyond this point, the deflection increases more rapidly than the load, indicating a non-linear behavior.

T-166



SHEAR STRENGTH PARAMETERS

$\phi = 22.3^\circ$
 $c = 0.510$
 $\sigma' = 2.00$

TEST NO.	1	2
WATER CONTENT	W 32.6	32.6
WATER RATIO	e 1.981	1.972
SATURATION	S 39.8	39.1
DETERMINED	82.2	81.4
WATER RATIO AFTER	e 2.014	2.023
WATER RATIO AFTER	e 2.000	2.000
WATER CONTENT	W 30.2	28.9
WATER RATIO	e 2.480	2.439
SATURATION	S 100	100
NORMAL STRESS	4.80	4.80
MAXIMUM SHEAR	2.77*	2.45*
ACTUAL SHEAR	2.60	2.60
FAILURE PLANE	0.0005	0.0005

COOPER RIVER RAILROAD

COOPER RIVER RAILROAD

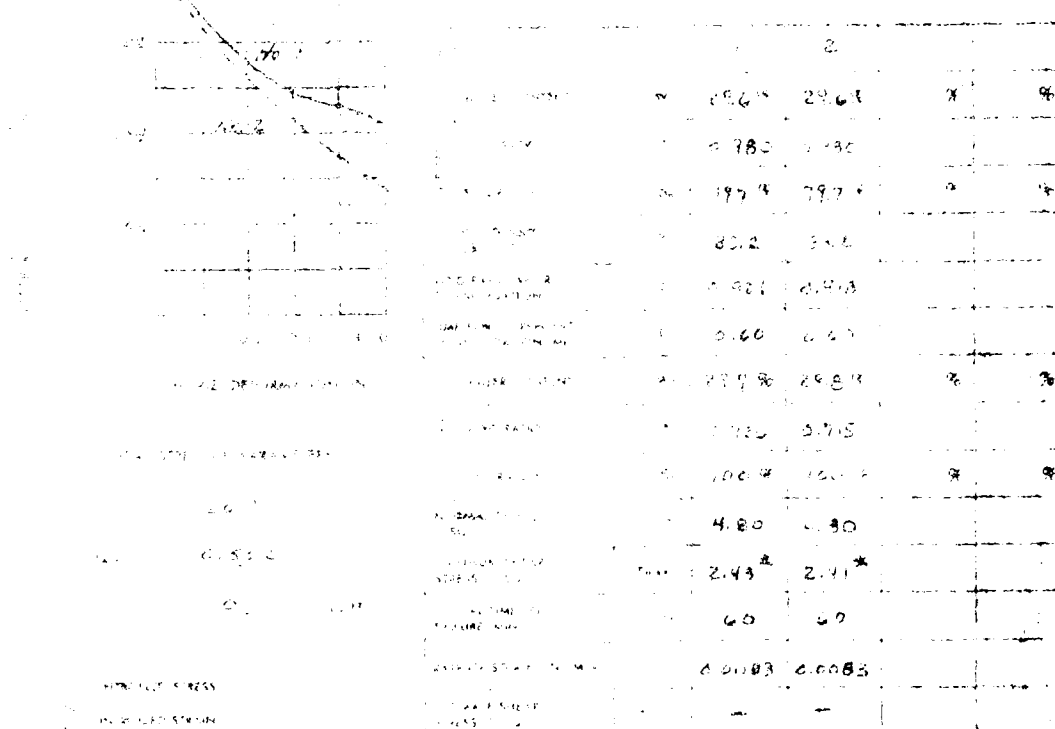
COOPER RIVER RAILROAD
 St. Stephen, S. C.
 Railroad Relocation

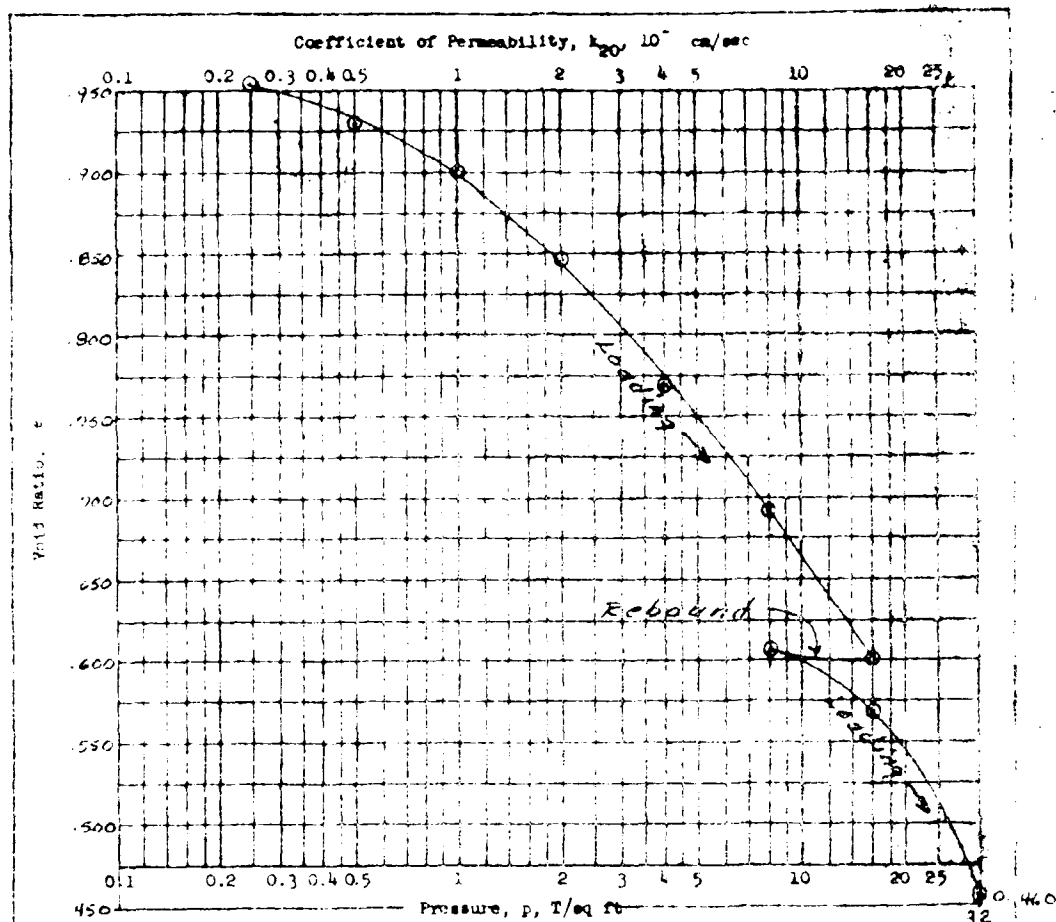
* Sample molded @ approx.
 maximum content of water (max.
 24% and dry density of 1.45 g/cc
 (145 lb/cu ft maximum density)

DIRECT SHEAR TEST REPORT

FORM 2002

7-1-67

[illegible]



Type of Specimen				Before Test		After Test	
Size	4.45 in.	DL	1.0 in.	Water Content, %	38.6 %	w_1	30.6 %
Overburden Pressure, p_0	T/eq ft			Void Ratio, e_0	0.980	e_1	0.460
Preconsol. Pressure, p_c	T/eq ft			Saturation, %	87.9 %	S_1	100 %
Compression Index, C_c	0.39			Dry Density, γ_d	88.2 lb/ft ³		
Classification	fine sandy clay (CH)			k_{20}	10^{-7} cm/sec		
IL	64	U_c	8.64	Project Cooper River Redirection			
PL	86	U_L		St. Stephen, S. Carolina			
Remarks				Attn: RAILROAD RELOCATION			
moisture content of 38.6%				Poring No.	C-4	Sample No.	C-4
(6.45 + 3%) and dry density				Depth	-	Date March 1976	
of 83.2 Pcf (95% maximum density)				CONSOLIDATION TEST REPORT			

SD-1 FORM 2070
MAY 61

PREVIOUS EDITIONS ARE OBSOLETE

Sheet 1 of 2

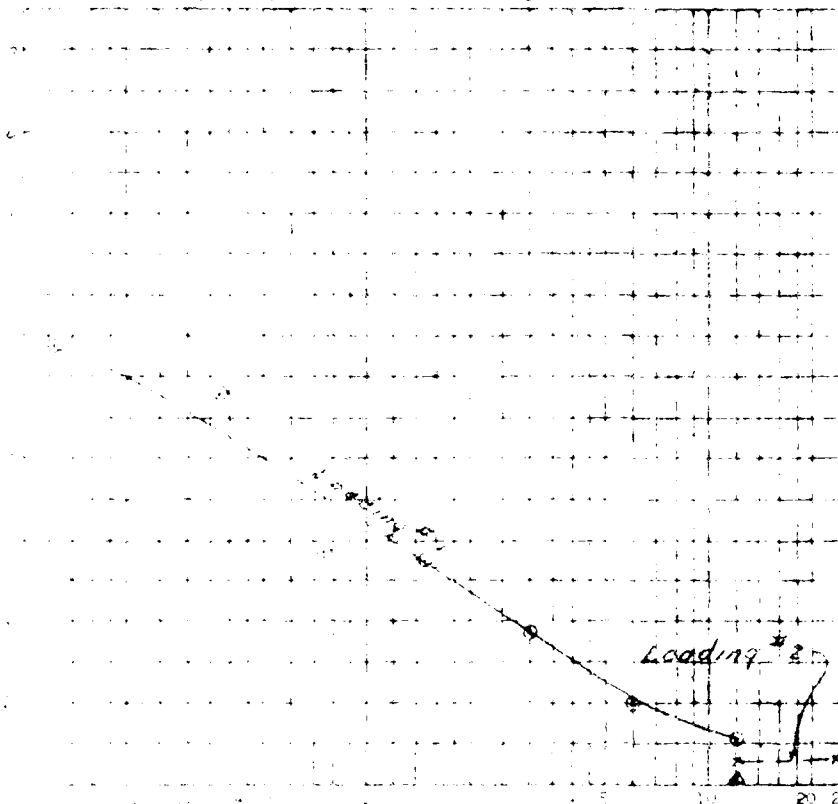
7-100
7-100

Coefficient of permeability $k_{90} \times 10^{-7}$ cm/sec

0.5 1 2 3 4 5

10

20



Pressure, p , tons/ft²

Remolded		Before Test		After Test	
Area, A , sq ft	2.0	Water Content, w_0 , %		w_f , %	
Overburden Pressure, p_0 , tons/ft ²		Void Ratio, e_0		e_f	
Overburden Pressure, p_0 , tons/ft ²		Saturation, S_0 , %		S_f , %	
Coarsest grain size, d_{60} , mm	0.25	Dry Density, γ_d , lb/ft ³			
Description of fine sandy (CLAY RN)		$k_{90} \times 10^{-7}$ cm/sec			
Project		Cooper River Rediversion			
Location		St. Stephen, S. Carolina			
Purpose of test		RAILROAD RELOCATION			
Boring No. C-4		Sample No. C-4			
Depth, ft		Date March 1976			
Remarks: (e.g., at 30 ft)					
at 80% (15% maximum density)					

CONSOLIDATION TEST REPORT

DATE 3/20/76

ALL DIMENSIONS ARE IN FEET, ETC.

UNSATURATED

Sheet 2 of 2

0. 14.24

T-10

BORING NO. 23
 SAMPLE NO. 2-1
 DEPTH: 2.6 to 2.8 ft.

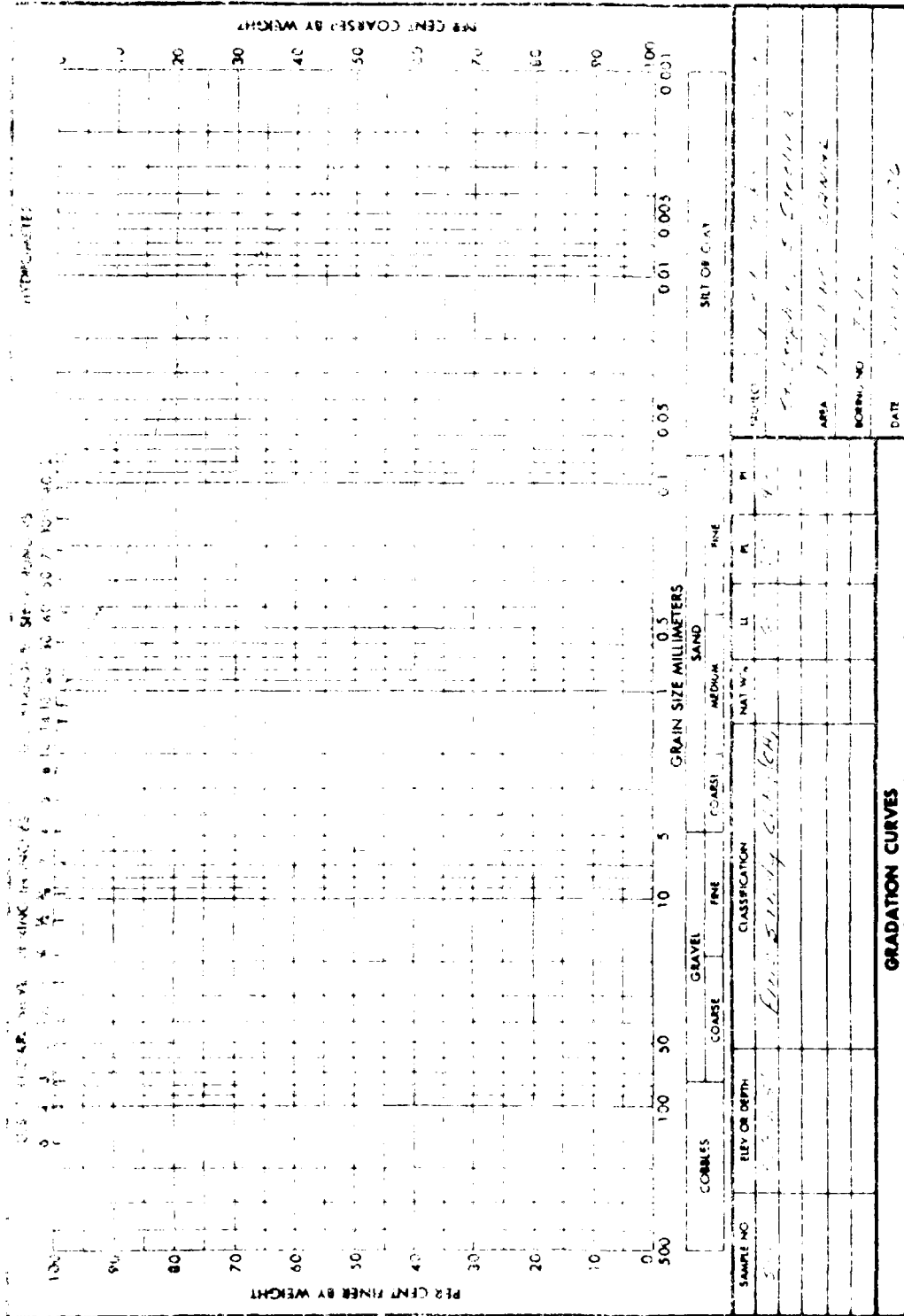
PROJECT 2300
 DATE 7-1-57
 COMP. BY W. H. CHK'D BY W. H.

LABORATORY LOG		DESCRIPTION	W, CAN NO	TEST SAMPLES
SAMPLE DEPTH IN FEET	24			
	23			
	22			
	21			
	20			
	19			
	18			
	17			
	16			
	15			
	14			
	13			
	12	1.00 Sample		
	11	1.00 Sample		
	10			
	9			
	8			
	7			
	6			
	5			
	4			
	3			
	2			
	1			
	0			

Length of Sample, L 1.00 in.
 Weight of Tube and Wet Soil 1.25 g.
 Weight of Tube 0.25 g.
 Weight of Wet Soil, W 1.00 g.
 Diameter of Tube, D 0.50 in.
 Total Unit Weight, $\gamma_t = \frac{4.85 W}{L D^2} = \frac{4.85 \times 1.00}{1.00 \times 0.50^2} = 19.4$ lbs/cu. ft.

UNDISTURBED SAMPLE LOG

LEGEND
 W_n - Natural Water Content
 MA - Mechanical Analysis
 LL - Atterberg Limits
 G - Specific Gravity
 C - Consolidation
 Q - Unconsolidated Undrained
 Y₀ - Dry Density
 R - Consolidated Undrained
 S - Consolidated Drained
 UC - Unconfined Compression



F-172

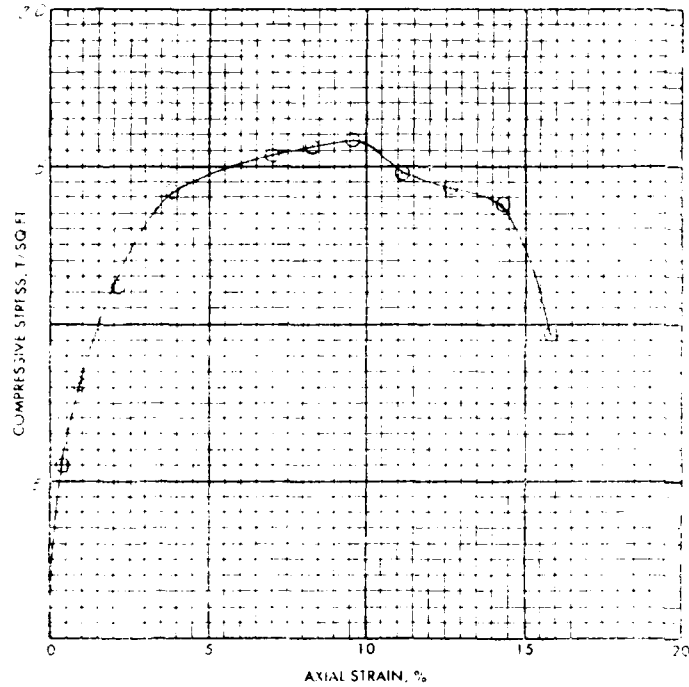
ENG FORM 2087 REPLACES WES FORM NO 1241, SEP 1962, WHICH IS OBSOLETE

U.S. GOVERNMENT PRINTING OFFICE: 1963 O-70-100-10

FAILURE SKETCHES



☐ CONTROLLED STRESS
☒ CONTROLLED STRAIN



TEST NO.

TYPE OF SPECIMEN

WATER CONTENT

VOID RATIO

SATURATION

DRY DENSITY, LB. CU. FT.

TIME TO FAILURE, MIN.

UNCONFINED COMPRESSIVE
STRENGTH, T/SQ FT.

UNDRAINED SHEAR STRENGTH, T/SQ FT.

SENSITIVITY RATIO

INITIAL SPECIMEN DIAMETER, IN.

INITIAL SPECIMEN HEIGHT, IN.

CLASSIFICATION

FC 6.8

PL 2.5

PI 4.3

IG 2.62

REMARKS

PROJECT

Deeper River Reclamation Co.,
St. Stephens, N. C.

AREA

THURGOOD CANAL

BORING NO.

T-18

SAMPLE NO.

1-1

DEPTH

9.0' - 11.5'

DATE

December 1964

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

FM 11-100 (1-1960)

CONTINUOUS

DOT 11-100 (1-1960)

PLA 7-13

<p>1. <i>1000</i></p>		<p>2. <i>1000</i></p>	
<p>3. <i>1000</i></p>		<p>4. <i>1000</i></p>	
<p>5. <i>1000</i></p>		<p>6. <i>1000</i></p>	
<p>7. <i>1000</i></p>		<p>8. <i>1000</i></p>	
<p>9. <i>1000</i></p>		<p>10. <i>1000</i></p>	
<p>11. <i>1000</i></p>		<p>12. <i>1000</i></p>	
<p>13. <i>1000</i></p>		<p>14. <i>1000</i></p>	
<p>15. <i>1000</i></p>		<p>16. <i>1000</i></p>	
<p>17. <i>1000</i></p>		<p>18. <i>1000</i></p>	
<p>19. <i>1000</i></p>		<p>20. <i>1000</i></p>	
<p>21. <i>1000</i></p>		<p>22. <i>1000</i></p>	
<p>23. <i>1000</i></p>		<p>24. <i>1000</i></p>	
<p>25. <i>1000</i></p>		<p>26. <i>1000</i></p>	
<p>27. <i>1000</i></p>		<p>28. <i>1000</i></p>	
<p>29. <i>1000</i></p>		<p>30. <i>1000</i></p>	
<p>31. <i>1000</i></p>		<p>32. <i>1000</i></p>	
<p>33. <i>1000</i></p>		<p>34. <i>1000</i></p>	
<p>35. <i>1000</i></p>		<p>36. <i>1000</i></p>	
<p>37. <i>1000</i></p>		<p>38. <i>1000</i></p>	
<p>39. <i>1000</i></p>		<p>40. <i>1000</i></p>	
<p>41. <i>1000</i></p>		<p>42. <i>1000</i></p>	
<p>43. <i>1000</i></p>		<p>44. <i>1000</i></p>	
<p>45. <i>1000</i></p>		<p>46. <i>1000</i></p>	
<p>47. <i>1000</i></p>		<p>48. <i>1000</i></p>	
<p>49. <i>1000</i></p>		<p>50. <i>1000</i></p>	
<p>51. <i>1000</i></p>		<p>52. <i>1000</i></p>	
<p>53. <i>1000</i></p>		<p>54. <i>1000</i></p>	
<p>55. <i>1000</i></p>		<p>56. <i>1000</i></p>	
<p>57. <i>1000</i></p>		<p>58. <i>1000</i></p>	
<p>59. <i>1000</i></p>		<p>60. <i>1000</i></p>	
<p>61. <i>1000</i></p>		<p>62. <i>1000</i></p>	
<p>63. <i>1000</i></p>		<p>64. <i>1000</i></p>	
<p>65. <i>1000</i></p>		<p>66. <i>1000</i></p>	
<p>67. <i>1000</i></p>		<p>68. <i>1000</i></p>	
<p>69. <i>1000</i></p>		<p>70. <i>1000</i></p>	
<p>71. <i>1000</i></p>		<p>72. <i>1000</i></p>	
<p>73. <i>1000</i></p>		<p>74. <i>1000</i></p>	
<p>75. <i>1000</i></p>		<p>76. <i>1000</i></p>	
<p>77. <i>1000</i></p>		<p>78. <i>1000</i></p>	
<p>79. <i>1000</i></p>		<p>80. <i>1000</i></p>	
<p>81. <i>1000</i></p>		<p>82. <i>1000</i></p>	
<p>83. <i>1000</i></p>		<p>84. <i>1000</i></p>	
<p>85. <i>1000</i></p>		<p>86. <i>1000</i></p>	
<p>87. <i>1000</i></p>		<p>88. <i>1000</i></p>	
<p>89. <i>1000</i></p>		<p>90. <i>1000</i></p>	
<p>91. <i>1000</i></p>		<p>92. <i>1000</i></p>	
<p>93. <i>1000</i></p>		<p>94. <i>1000</i></p>	
<p>95. <i>1000</i></p>		<p>96. <i>1000</i></p>	
<p>97. <i>1000</i></p>		<p>98. <i>1000</i></p>	
<p>99. <i>1000</i></p>		<p>100. <i>1000</i></p>	

BIAXIAL COMPRESSION TEST REPORT

T-176

1003

SHEAR STRENGTH PARAMETERS

20.5'

NORMAL STRESS, T/SQ FT

TEST NO.		1		2	
INITIAL	WATER CONTENT	W	21.0	22.1	
	VOID RATIO	e	0.741	0.54	
	SATURATION	S	100	95	
	DRY DENSITY	ρ_d	91.8	90.1	
	VOID RATIO AFTER CONSOLIDATION	e	0.445	0.500	
	TIME FOR 50 PERCENT CONSOLIDATION, MIN	t	4	1	
FINAL	WATER CONTENT	W	23.1	24.4	
	VOID RATIO	e	0.280	0.308	
	SATURATION	S	100	100	
	NORMAL STRESS, T/SQ FT		4.80	4.80	
	MAXIMUM SHEAR STRESS, T/SQ FT		2.40*	1.88*	
	ACTUAL TIME TO FAILURE, MIN	t	180	180	
	RATE OF STRAIN, IN/MIN		0.0025	0.0025	
	ULTIMATE SHEAR STRESS, T/SQ FT				

TYPE OF SPECIMEN: *undisturbed fine sandy*

CLASSIFICATION: *fine sandy, 0.44 (2H)*

AREA: *3.14 IN SQUARE*

REMARKS: *Str. 1*
Longitudinal description

PROJECT: *Cooper River National*

AREA: *THUNDER CANAL*

DEPTH: *20.5'*

DATE: *6/1/50*

DIRECT SHEAR TEST REPORT

7-111

BORING NO. _____
 SAMPLE NO. _____
 DEPTH _____ to _____ ft

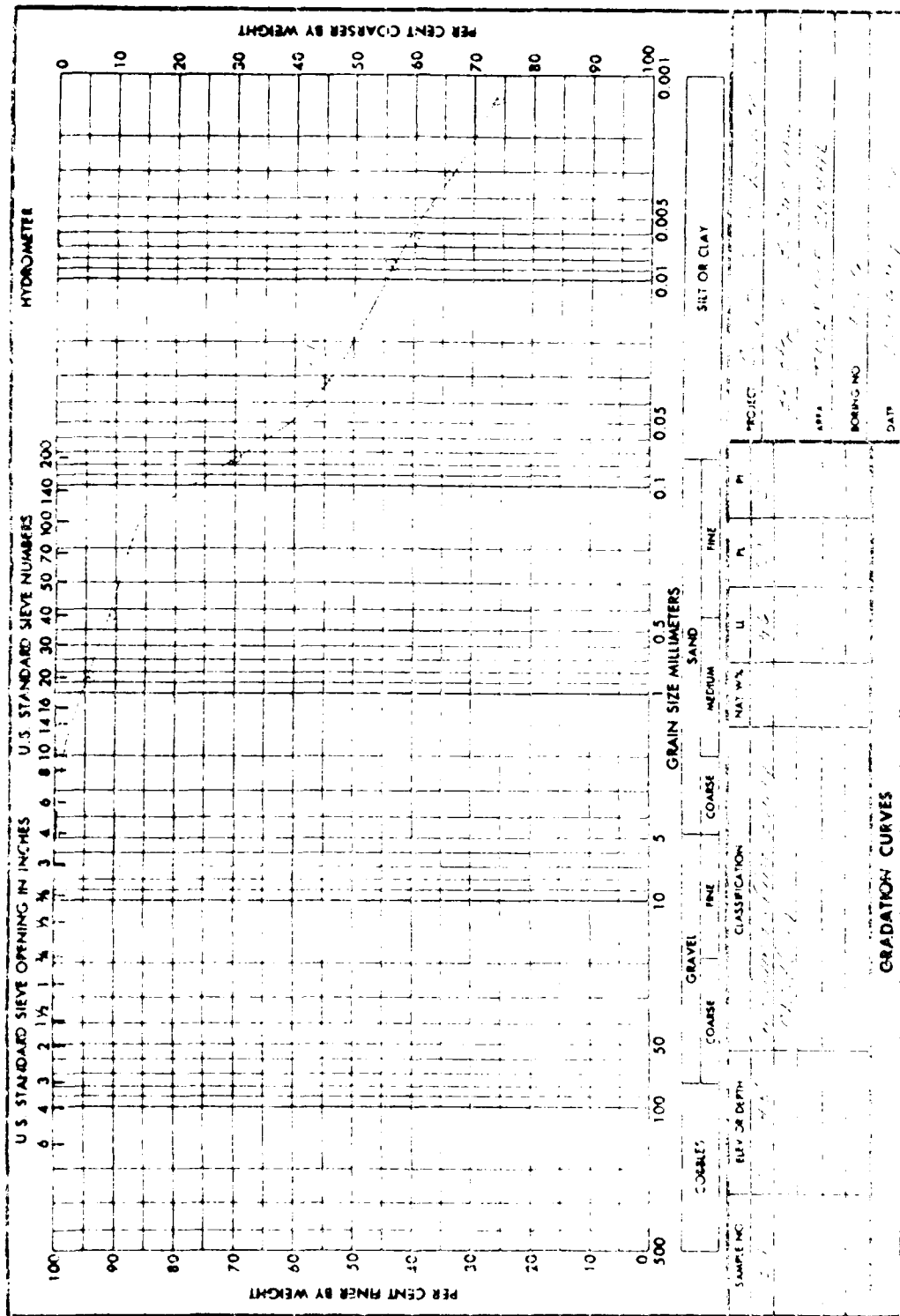
PROJECT _____
 DATE _____
 COMP. By _____ CHK'D By _____

SAMPLE DEPTH IN FEET	LABORATORY LOG	DESCRIPTION	W, CAN NO.	TEST SAMPLES
24				
23				
22				
21				
20				
19				
18			W-180	Slip test
17				Disturbed
16				
15				
14				
13			W-130	
12				S ₂
11				
10				
9			W-90	
8				
7				
6				
5			W-50	
4				
3				
2				
1				

Weight of Sample, W _____ g
 Weight of Sample and Water, $W + W_w$ _____ g
 Weight of Tube _____ g
 Weight of Water, W_w _____ g
 Diameter of Tube, D _____ in
 Total Unit Weight, $\gamma = \frac{4.85 W}{L D^2}$ _____ lbs/cu ft.

- LEGEND**
- W_n - Natural Water Content
 - MA - Mechanical Analysis
 - L - Atterberg Limits
 - G - Specific Gravity
 - C - Consolidation
 - Q - Unconsolidated Undrained
 - Y_d - Dry Density
 - R - Consolidated Undrained
 - S - Consolidated Drained
 - UC - Unconfined Compression

UNDISTURBED SAMPLE LOG



ENGINE FORM 2087

SEPARATES WEIGHING NO. 100 SEP. 0.075 WHICH IS COARSEST

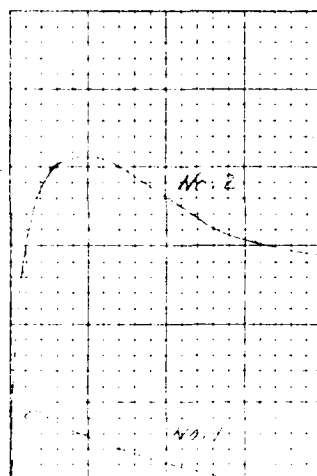
U.S. GOVERNMENT PRINTING OFFICE: 1961 O-540-100

67-79

PROJECT		AREA	
BORING NO.		SAMPLE NO.	
DEPTH		DATE	
TEST DATE		TEST TIME	
TESTER		REVIEWER	
TEST LOCATION		TEST ELEVATION	
TEST METHOD		TEST RESULTS	
TEST COMMENTS		TEST CONCLUSIONS	

UNCONFINED COMPRESSION TEST REPORT	
TEST RESULTS	
TEST COMMENTS	
TEST CONCLUSIONS	

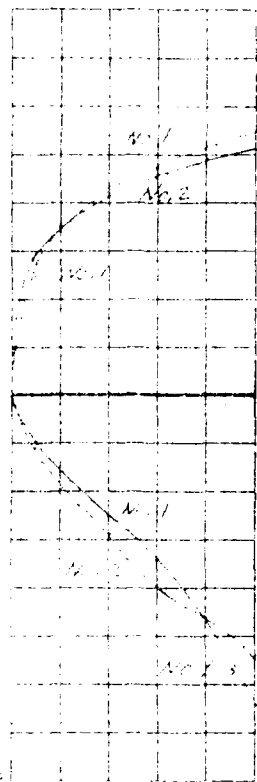
T-192 T-199

[illegible]

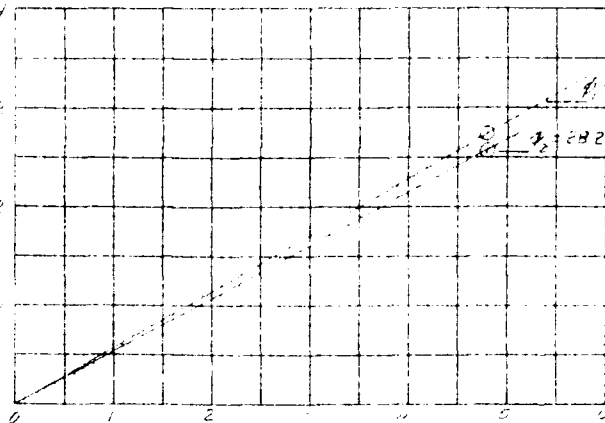
SPECIMEN NO.		DATE	
IN TIAL	WATER CONTENT	%	
	DRY DENSITY	lb/cu ft	
	LB/CU FT		
	SATURATION	%	
	VOID RATIO		
BEFORE SHEAR	WATER CONTENT	%	
	DRY DENSITY	lb/cu ft	
	LB/CU FT		
	SATURATION	%	
	VOID RATIO		
FINAL BACK PRESSURE		lb/cu ft	
MINOR PRINCIPAL STRESS		lb/cu ft	
MAXIMUM DEVIATOR STRESS		lb/cu ft	
MINOR PRINCIPAL STRESS		lb/cu ft	
MAXIMUM PRINCIPAL STRESS		lb/cu ft	
STRAIN		%	
STRAIN RATE		in./min	
TESTER			
TEST NO.			
TEST DATE			
TEST TIME			
TEST LOCATION			
TEST METHOD			
TEST RESULTS			
TEST COMMENTS			

TRIAXIAL COMPRESSION TEST REPORT

F-193



SHEAR STRENGTH - LB/SQ FT



NORMAL STRESS - LB/SQ FT

FIG. 2. DEFORMATION, IN.

SEE FIG. 1 FOR TEST PARAMETERS

TEST NO. 2092

DATE 10/1/55

LOCATION 100' S. OF BRIDGE

TEST NO.	2092
WATER CONTENT	W 27.4
VOID RATIO	V 1.00
SATURATION	S 83.4
DRY DENSITY	D 95.6
VOID RATIO AFTER CONSOLIDATION	V 0.95
TIME FOR 50 PERCENT CONSOLIDATION MIN.	T 1.5
WATER CONTENT	W 27.7
VOID RATIO	V 1.00
SATURATION	S 100.0
NORMAL STRESS	N 4.0
MAXIMUM SHEAR STRESS	S 2.5
ACTUAL TIME TO FAILURE MIN.	T 60
RATE OF STRAIN IN MIN.	0.0001
ULTIMATE SHEAR STRESS	S 2.5

PROJECT 100' S. OF BRIDGE

AREA 100' S. OF BRIDGE

DEPTH 100' S. OF BRIDGE

DATE 10/1/55

LOCATION 100' S. OF BRIDGE

PROJECT 100' S. OF BRIDGE

AREA 100' S. OF BRIDGE

DEPTH 100' S. OF BRIDGE

DATE 10/1/55

LOCATION 100' S. OF BRIDGE

DIRECT SHEAR TEST REPORT

BORING NO. _____
 SAMPLE NO. _____
 DEPTH: _____ to _____ ft.

PROJECT _____
 DATE _____
 COMP. By _____ CHK'D By _____

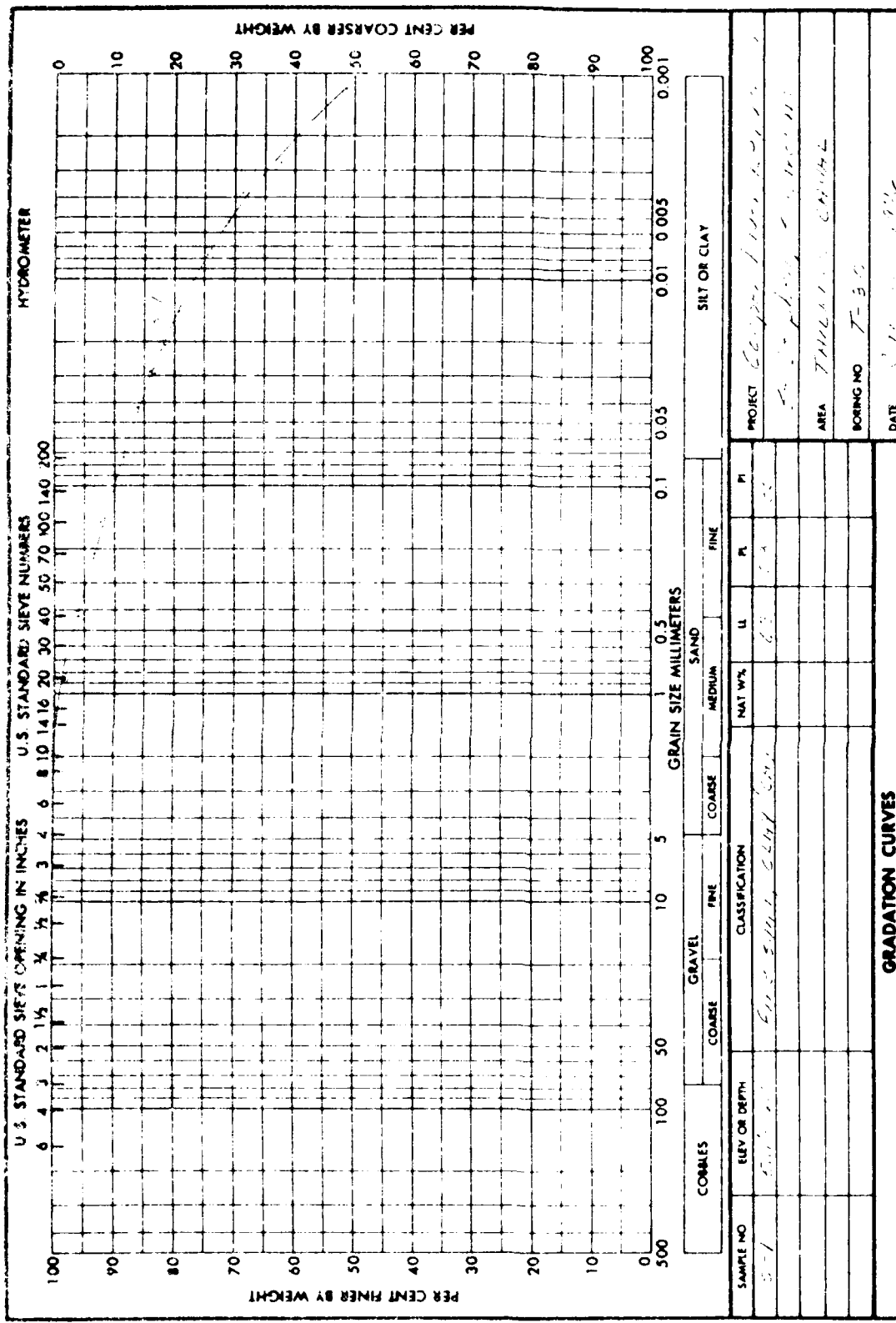
LABORATORY LOG		DESCRIPTION	W, CAN NO.	TEST SAMPLES
SAMPLE DEPTH IN FEET	24			
	23			
	22			
	21			
	20			
	19			
	18			
	17			
	16			
	15			
	14			
	13			
	12			
	11			
	10			
	9			
	8			
	7			
	6			
	5			
	4			
	3			
	2			
	1			
	0			

Length of Sample, L _____ in.
 Weight of Tube and Wet Soil _____ g.
 Weight of Tube _____ g.
 Weight of Wet Soil, W _____ g.
 Diameter of Tube, D _____ in.
 Total Unit Weight, $\gamma_t = \frac{4.85 W}{L D^2}$ _____ lbs/cu.ft.

UNDISTURBED SAMPLE LOG

LEGEND

W_n - Natural Water Content
 MA - Mechanical Analysis
 LL - Atterberg Limits
 G - Specific Gravity
 C - Consolidation
 Q - Unconsolidated Undrained
 γ_d - Dry Density
 R - Consolidated Undrained
 S - Consolidated Drained
 UC - Unconfined Compression



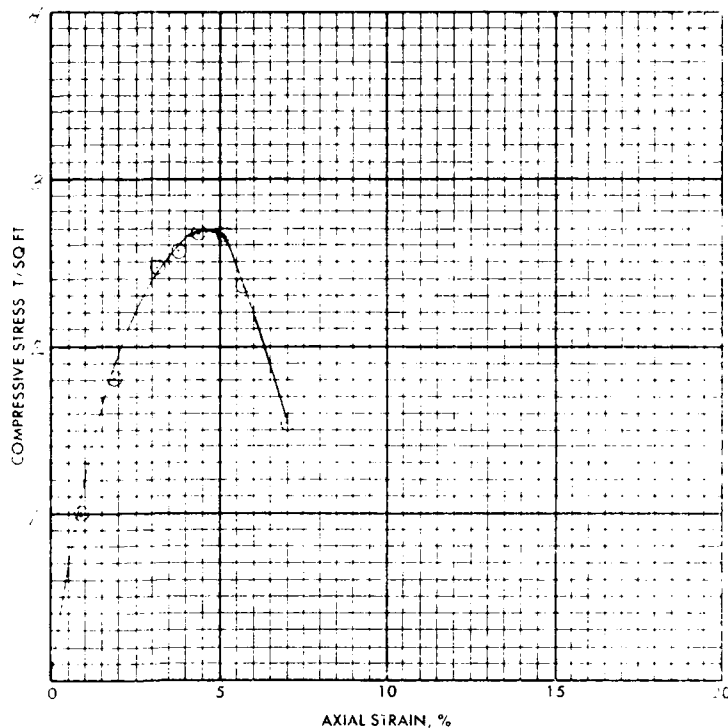
U.S. STANDARD SIEVE OPENING IN INCHES: 6, 4, 3, 2, 1 1/2, 1, 3/4, 3/8, 3/16, 1/8, 1/4, 1/2, 3/4, 1, 1 1/2, 2, 3, 4, 6, 10, 14, 20, 30, 40, 50, 70, 100, 140, 200
 U.S. STANDARD SIEVE NUMBERS: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 180, 200
 HYDROMETER: 0.001, 0.002, 0.004, 0.0075, 0.015, 0.03, 0.06, 0.12, 0.25, 0.5, 1, 2, 4, 8, 15, 30, 60, 100

PROJECT: *Cooper River Bridge*
 AREA: *Thurman Canal*
 BORING NO: *T-30*
 DATE: *Jan 1962*

ENG FORM 2087
 1 MAY 63
 REPLACES WES FORM NO 1241, SEP 1962, WHICH IS OBSOLETE

T-186 T-183

FAILURE SKETCHES



CONTROLLED STRESS

CONTROLLED STRAIN

TEST NO

TYPE OF SPECIMEN

WATER CONTENT

VOID RATIO

SATURATION

DRY DENSITY, LB/CU FT

TIME TO FAILURE, MIN

UNCONFINED COMPRESSION STRENGTH, T/SQ FT

UNDRAINED SHEAR STRENGTH, T/SQ FT

SENSITIVITY RATIO

INITIAL SPECIMEN DIAMETER, IN

INITIAL SPECIMEN HEIGHT, IN

CLASSIFICATION

EL

PL

PI

G

REMARKS

PROJECT

AREA

BORING NO

DEPTH

SAMPLE NO

DATE

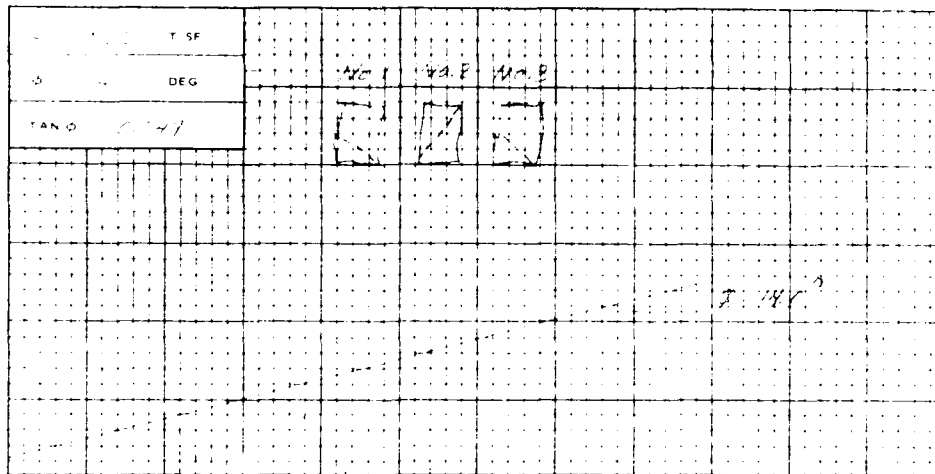
UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

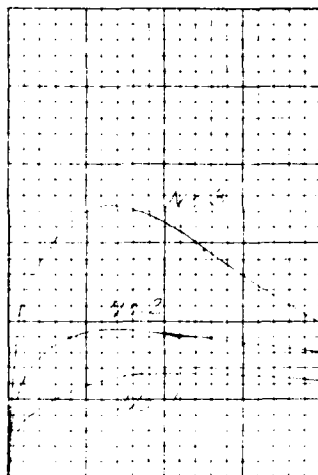
1. M. 11100-2-10000

TRANSMITTED

T-137



NORMAL STRESS, σ , T. SQ. FT.



SPECIMEN NO.		1	2	3
INITIAL	WATER CONTENT %	w_0 25.1	25.1	25.1
	DRY DENSITY LB. CU. FT.	ρ_d 97.1	97.1	97.1
	SATURATION %	s_0 100	100	100
	VOID RATIO	e_0 0.70	0.70	0.70
BEFORE SHEAR	WATER CONTENT %	w_c 25.1	25.1	25.1
	DRY DENSITY LB. CU. FT.	ρ_d 97.1	97.1	97.1
	SATURATION %	s_c 100	100	100
	VOID RATIO	e_c 0.70	0.70	0.70
FINAL BACK PRESSURE, T. SQ. FT.		u_0 0.0	0.0	0.0
MINOR PRINCIPAL STRESS, T. SQ. FT.		σ_3 0.0	0.0	0.0
MAXIMUM DEVIATOR STRESS, T. SQ. FT.		$\sigma_1 - \sigma_3$ 1.4	1.2	1.0
TIME TO FAILURE, MIN.		t_f 15	15	15
ULTIMATE DEVIATOR STRESS, T. SQ. FT.		$\sigma_1 - \sigma_3$ 1.4	1.2	1.0
INITIAL DIAMETER, IN.		d_c 1.5	1.5	1.5
INITIAL HEIGHT, IN.		h_0 2.0	2.0	2.0

TEST NO. 189

DATE 10/1/54

LABORATORY U.S. ARMY CORPS OF ENGINEERS

TEST TYPE TRIAXIAL COMPRESSION

TEST RESULT 1.4

TEST DESCRIPTION

TEST LOCATION

TEST OPERATOR

TEST REVIEWER

TEST APPROVAL

TEST REPORT

TRIAXIAL COMPRESSION TEST REPORT

FORM 100-1 (10-54) (10-54) (10-54) (10-54) (10-54) (10-54) (10-54) (10-54) (10-54) (10-54)

T-189

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T-190

HORIZ. DEFORMATION, IN

SHEAR STRENGTH PARAMETERS

TAN $\phi = 42^\circ$

C = 0.2 T/SQ FT

☐ CONTROLLED STRESS
☒ CONTROLLED STRAIN

TEST NO.		1	2
INITIAL	WATER CONTENT	W = 21.7	20.3
	VOID RATIO	e = 0.750	0.760
	SATURATION	S = 92.4	93.0
	DRY DENSITY, LB./CU. FT.	124	122
FINAL	VOID RATIO AFTER CONSOLIDATION	e = 0.466	0.475
	TIME FOR 50 PERCENT CONSOLIDATION, MIN	t = 1.7	1.7
	WATER CONTENT	W = 21.5	20.6
	VOID RATIO	e = 0.22	0.20
	SATURATION	S = 100	100
	NORMAL STRESS, T/SQ FT	N = 4.80	4.8
	MAXIMUM SHEAR STRESS, T/SQ FT	T _{max} = 2.10*	2.04*
	ACTUAL TIME TO FAILURE, MIN	t = 20	20
RATE OF STRAIN, IN/MIN		0.015, 0.015	
ULTIMATE SHEAR STRESS, T/SQ FT		T _u = —	

TYPE OF SPECIMEN *Undisturbed* 3.0 IN SQUARE

CLASSIFICATION *- fine sandy* 1/4 IN THICK

BROWN CLAY (CH)

LL *35* PL *28* PI *35* G *2.65*

REMARKS ** Sample # 25 not tested*

PROJECT *Cooper River Retention*

St. Stephens, S. Carolina

AREA *TAILRACE CANAL*

BORING NO *T-30* SAMPLE NO *5-1*

DEPTH *50'-6"* DATE *January 1964*

BORING NO. _____
 SAMPLE NO. _____
 DEPTH _____ to _____ ft.

PROJECT _____
 DATE _____
 COMP By _____ CHK'D By _____

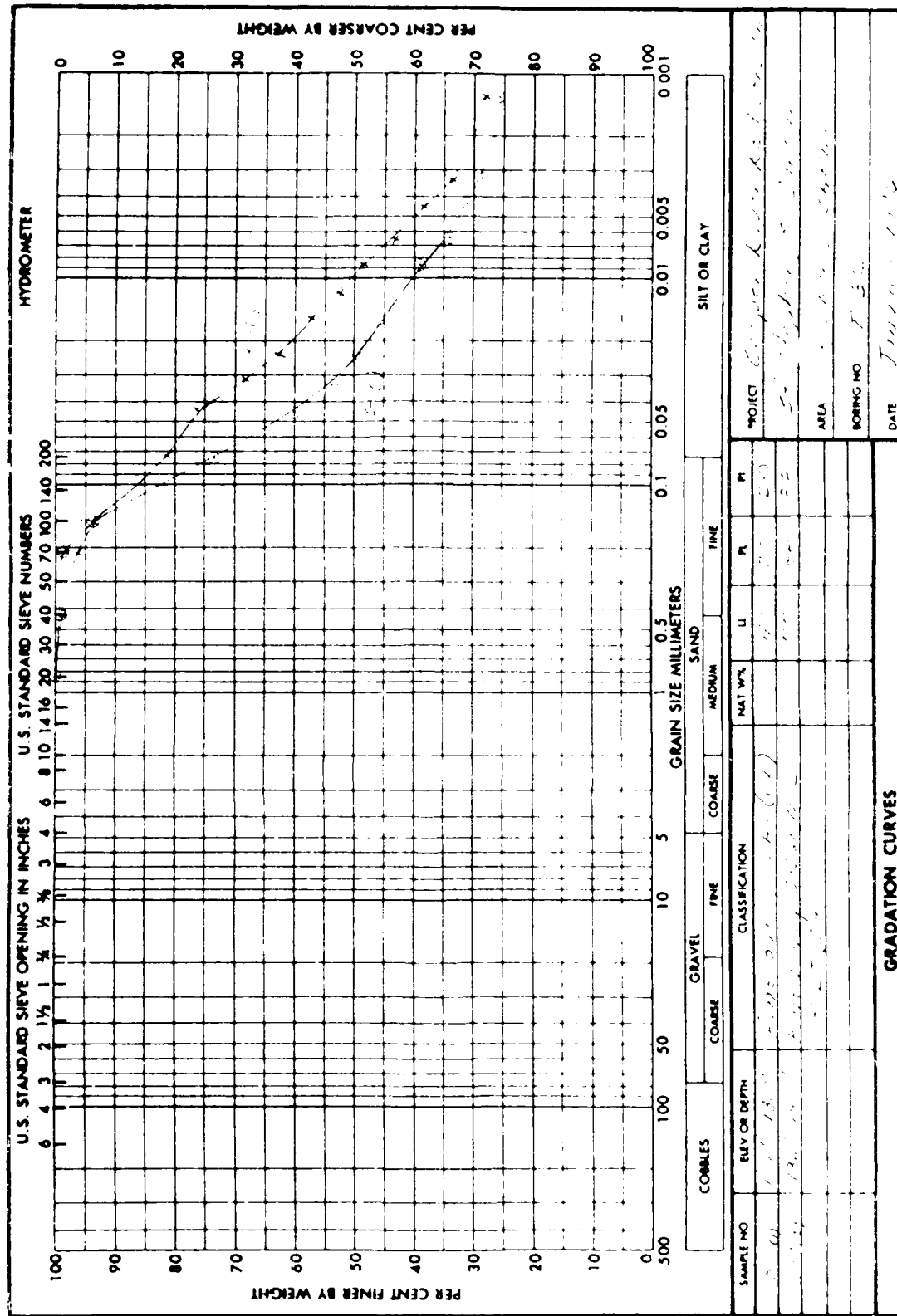
LABORATORY LOG	DESCRIPTION	W. CAN NO	TEST SAMPLES
24			
23			
22			
21	(CL)		
20			
19			
18			
17			
16			
15			
14			
13			
12	dark grey fine sand		
11	(CL) w/		
10	scattered roots and		
9	small pieces of pebbles		
8			
7			
6			
5			
4			
3			
2			
1			
0	bottom of sample		

Length of Sample, L _____ in.
 Weight of Tube and Wet Soil _____ g.
 Weight of Tube _____ g.
 Weight of Wet Soil, W _____ g.
 Diameter of Tube, D _____ in.
 Total Unit Weight, $\gamma_t = \frac{4.85 W}{LD^2}$ _____ lbs/cu.ft.

UNDISTURBED SAMPLE LOG

LEGEND

W_n - Natural Water Content
 MA - Mechanical Analysis
 LL - Atterberg Limits
 G - Specific Gravity
 C - Consolidation
 Q - Unconsolidated Undrained
 γ_0 - Dry Density
 R - Consolidated Undrained
 S - Consolidated Drained
 UC - Unconfined Compression



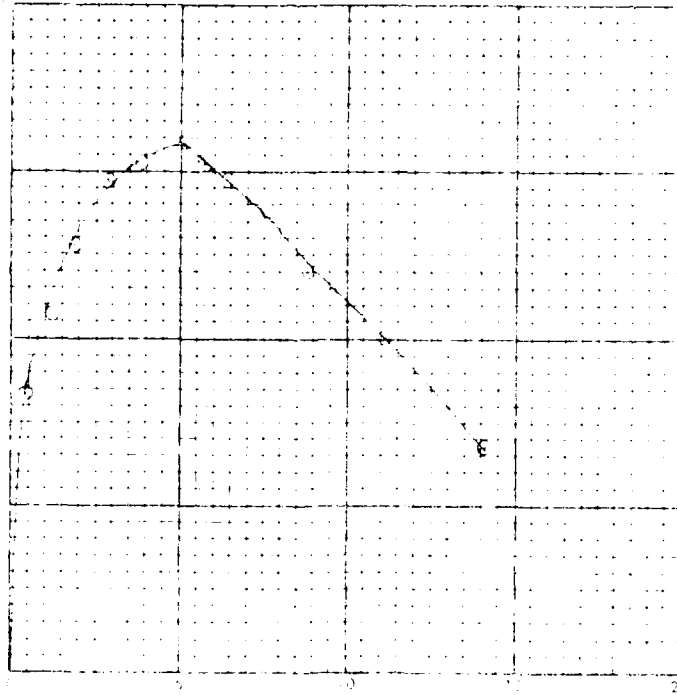
ENG FORM 2087

REPLACES WES FORM NO 1241 SEP 1962 WHICH IS OBSOLETE

T-193 187

FAILURE SKETCHES

COMPRESSION STRESS (PSI)



AXIAL STRAIN

TEST NUMBER

TEST DATE

TESTER

TEST LOCATION

TESTER'S SIGNATURE

APPROVED BY

TESTER'S SIGNATURE

TEST DATE

TEST LOCATION

TESTER'S SIGNATURE

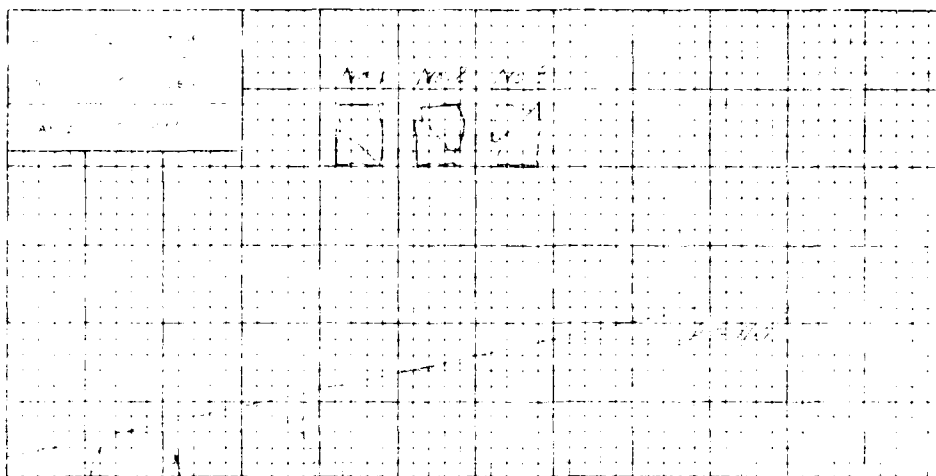
PL

SI

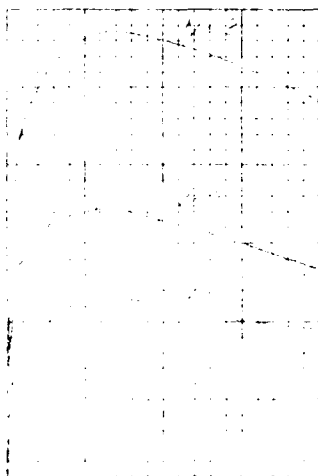
TEST NUMBER	TEST DATE
TESTER	TEST LOCATION
APPROVED BY	TESTER'S SIGNATURE
UNCONFINED COMPRESSION TEST REPORT	

UNCONFINED COMPRESSION TEST REPORT

T-194



MOISTURE-DENSITY CHART



TEST RESULTS	
WATER CONTENT, %	10.0
DENSITY, PCF	120.0
ATTERBURGH	100
LIQUID LIMIT	25
PLASTIC LIMIT	15
PLASTICITY INDEX	10
UNSATURATED WATER CONTENT, %	10.0
UNSATURATED DENSITY, PCF	120.0
UNSATURATED ATTERBURGH	100
UNSATURATED LIQUID LIMIT	25
UNSATURATED PLASTIC LIMIT	15
UNSATURATED PLASTICITY INDEX	10

TEST RESULTS

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TRIAxIAL COMPRESSION TEST REPORT

TEST RESULTS

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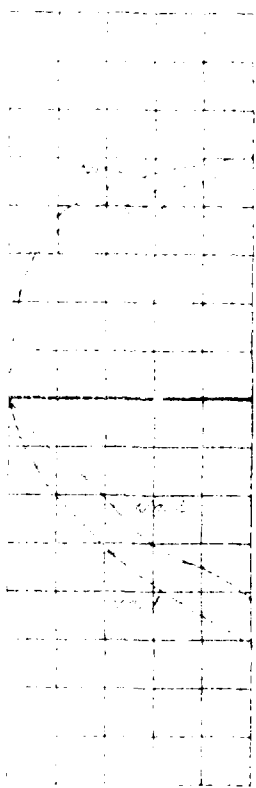
TEST RESULTS

TEST RESULTS

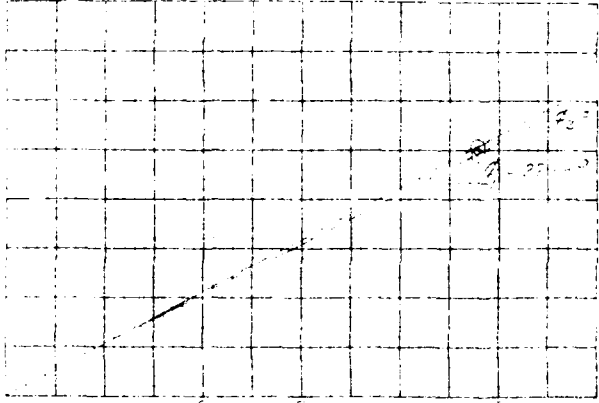
TEST RESULTS

TEST RESULTS

T-196



SAMPLE 1



NORMAL STRESS - LB/IN.²

TEST NO.

WATER CONTENT

MOISTURE RATIO

WATER RATIO

WATER RATIO

WATER RATIO

WATER RATIO

WATER RATIO

WATER RATIO

WATER RATIO

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WATER RATIO

WATER RATIO

WATER RATIO

WATER RATIO

WATER RATIO

WATER RATIO

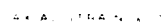
WATER RATIO

WATER RATIO

DIRECT SHEAR TEST REPORT

FORM 2092

7-198

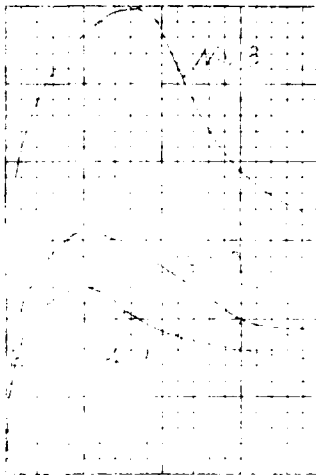
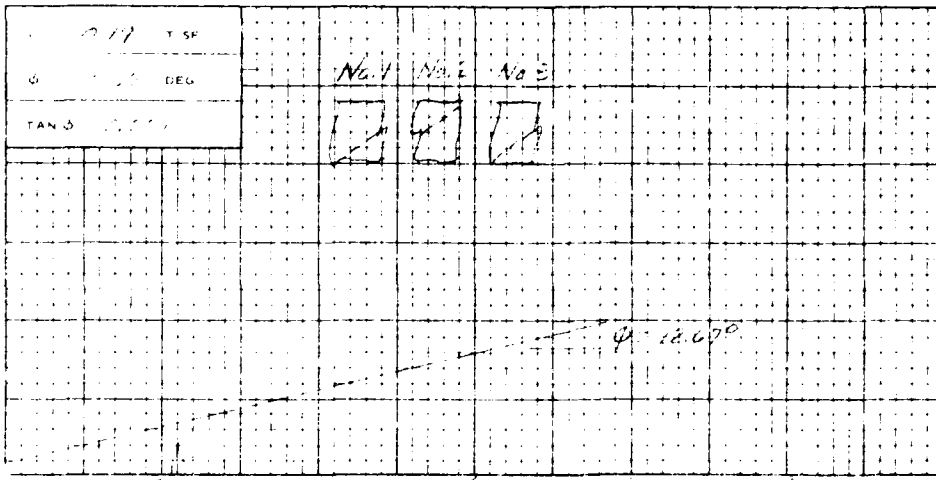
P. J. H. M. A., P. J. S., P. T. S. C. T.

TEST NO.	TEST	TEST DATE	TEST TIME	TEST LOCATION	TEST OPERATOR	TEST WITNESS	TEST APPROVER
1	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2	2.0	2.0	2.0	2.0	2.0	2.0	2.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	4.0	4.0	4.0	4.0	4.0	4.0	4.0
5	5.0	5.0	5.0	5.0	5.0	5.0	5.0
6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
7	7.0	7.0	7.0	7.0	7.0	7.0	7.0
8	8.0	8.0	8.0	8.0	8.0	8.0	8.0
9	9.0	9.0	9.0	9.0	9.0	9.0	9.0
10	10.0	10.0	10.0	10.0	10.0	10.0	10.0
11	11.0	11.0	11.0	11.0	11.0	11.0	11.0
12	12.0	12.0	12.0	12.0	12.0	12.0	12.0
13	13.0	13.0	13.0	13.0	13.0	13.0	13.0
14	14.0	14.0	14.0	14.0	14.0	14.0	14.0
15	15.0	15.0	15.0	15.0	15.0	15.0	15.0
16	16.0	16.0	16.0	16.0	16.0	16.0	16.0
17	17.0	17.0	17.0	17.0	17.0	17.0	17.0
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19	19.0	19.0	19.0	19.0	19.0	19.0	19.0
20	20.0	20.0	20.0	20.0	20.0	20.0	20.0
21	21.0	21.0	21.0	21.0	21.0	21.0	21.0
22	22.0	22.0	22.0	22.0	22.0	22.0	22.0
23	23.0	23.0	23.0	23.0	23.0	23.0	23.0
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44	44.0	44.0	44.0	44.0	44.0	44.0	44.0
45	45.0	45.0	45.0	45.0	45.0	45.0	45.0
46	46.0	46.0	46.0	46.0	46.0	46.0	46.0
47	47.0	47.0	47.0	47.0	47.0	47.0	47.0
48	48.0	48.0	48.0	48.0	48.0	48.0	48.0

TRIAXIAL COMPRESSION TEST REPORT

T-199-45

3000 1000



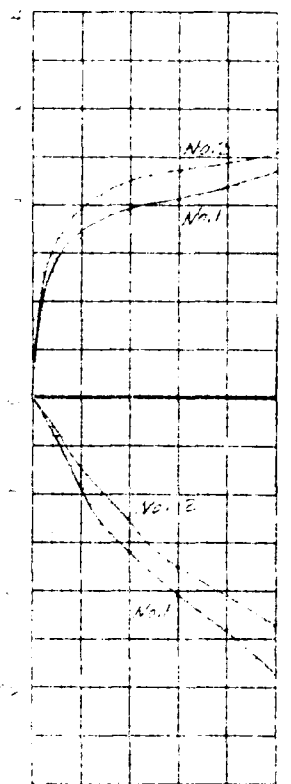
SPECIMEN NO.		1	2	3
C	WATER CONTENT	W _c	27.4	27.2
	DRY DENSITY	ρ _d	1.24	1.24
	GR. C. DET.			
	SATURATION	S	99.1	99.2
Z	COM. RATE	γ _s	1.00	1.00
DETER. TEST	WATER CONTENT	W _c	27.4	27.2
	DRY DENSITY	ρ _d	1.24	1.24
	GR. C. DET.			
	SATURATION	S	99.1	99.2
DETER. TEST	COM. RATE	γ _s	1.00	1.00
CON. TEST	WATER CONTENT	W _c	27.4	27.2
	DRY DENSITY	ρ _d	1.24	1.24
	GR. C. DET.			
	SATURATION	S	99.1	99.2
CON. TEST	COM. RATE	γ _s	1.00	1.00

TRIAxIAL COMPRESSION TEST REPORT

T-200 96

SHEAR STRESS, T. SQ. FT.

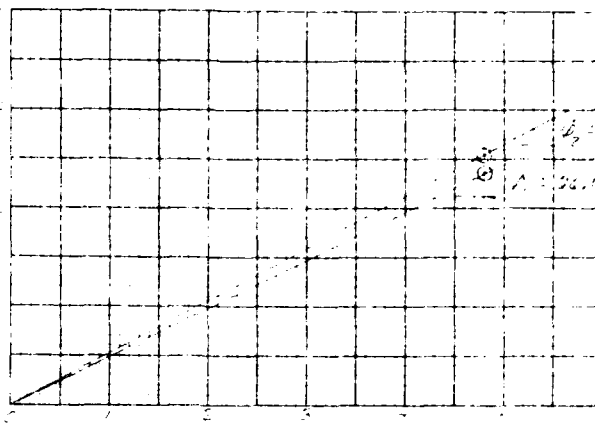
VERTICAL DEFORMATION, IN.



HORIZONTAL DEFORMATION, IN.

SHEAR STRESS, T. SQ. FT.

SHEAR STRESS, T. SQ. FT.



NORMAL STRESS, T. SQ. FT.

TEST NO.

WATER CONTENT

W. 22.4% 22.4%

VOID RATIO

e 1.24 1.24

SATURATION

S 100% 100%

DRY DENSITY

γ_d 102 102

VOID RATIO AFTER

CONSOLIDATION

e 1.04 1.04

TIME FOR 50 PERCENT

CONSOLIDATION, MIN.

t₅₀ 1.20 1.20

WATER CONTENT

W. 22.4% 22.4%

VOID RATIO

e 1.24 1.24

SATURATION

S 100% 100%

NORMAL STRESS

T. SQ. FT.

σ 7.0 7.0

MAXIMUM SHEAR

STRESS, T. SQ. FT.

τ_{max} 2.5 2.5

ACTUAL TIME TO

FAILURE, MIN.

t_f 1.20 1.20

RATE OF STRAIN, IN./MIN.

1.20 1.20

ULTIMATE SHEAR

STRESS, T. SQ. FT.

τ_{ult} 2.5 2.5

PROJECT NO.

DATE

TESTER

REMARKS

AREA, IN. SQUARE

PERCENTAGE

PERCENTAGE

PERCENTAGE

PERCENTAGE

PERCENTAGE

PERCENTAGE

PERCENTAGE

PERCENTAGE

PERCENTAGE

PERCENTAGE

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PERCENTAGE

PROJECT

AREA

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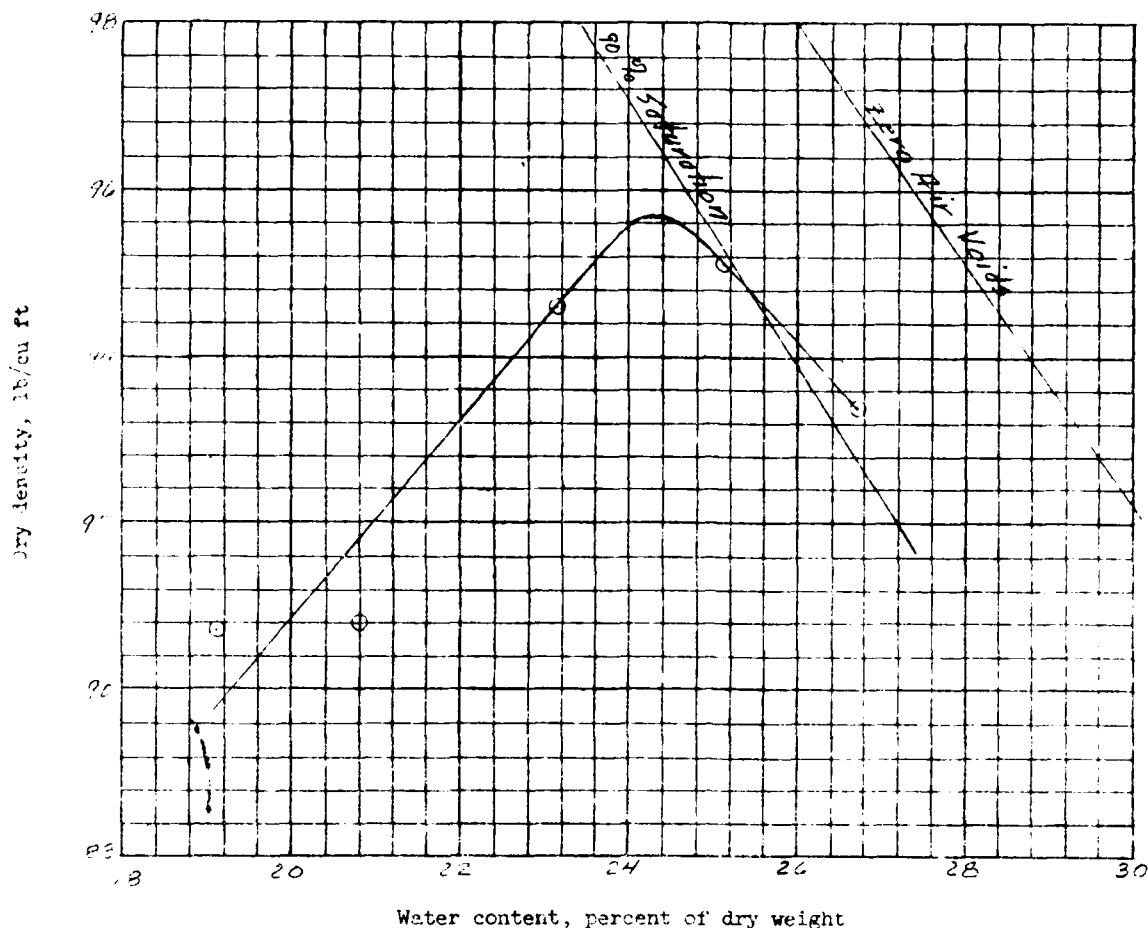
PERCENTAGE

PERCENTAGE

DIRECT SHEAR TEST REPORT

FED. FORM 2097

T-202 PLATE IX 3



Standard compaction test

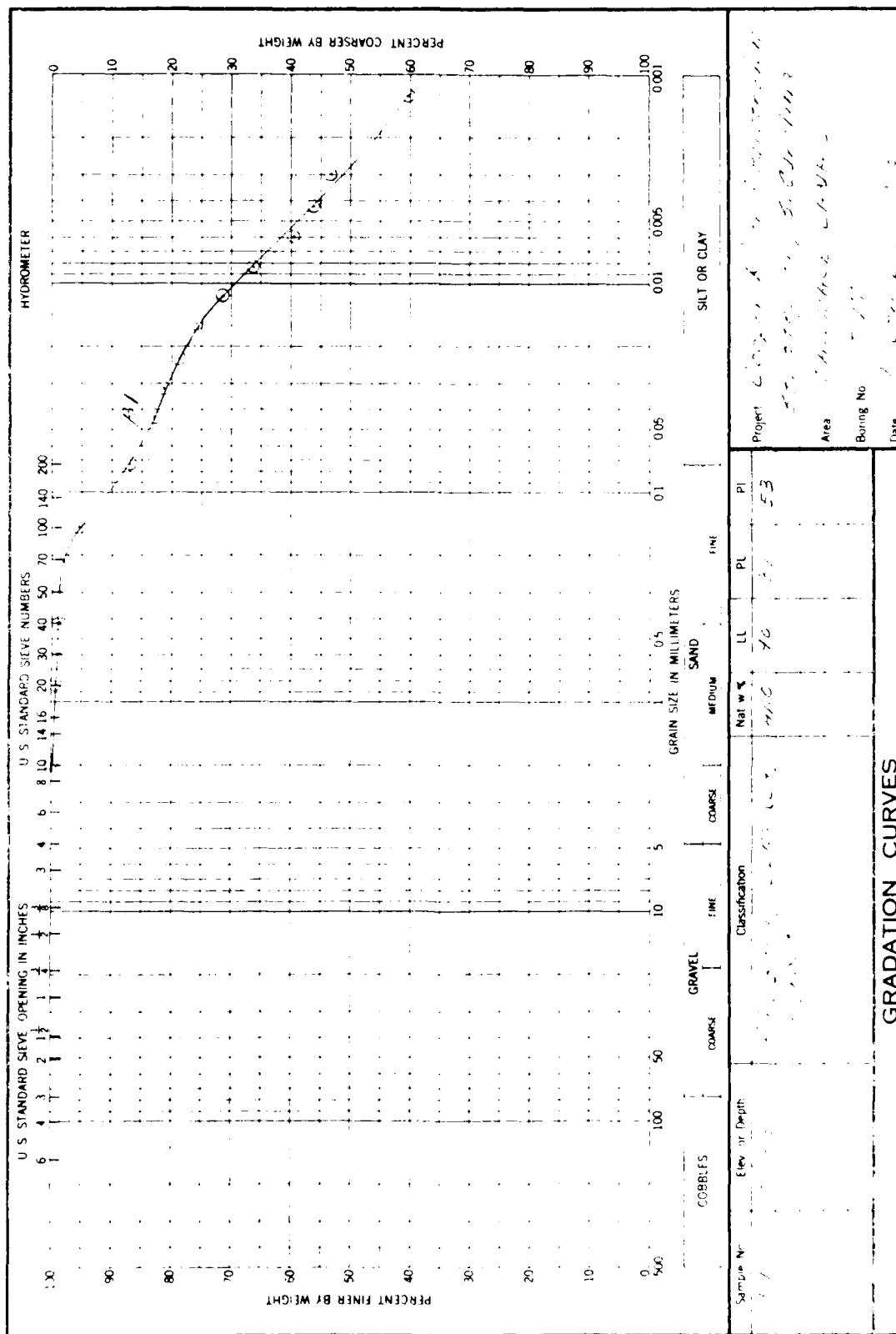
15 blows per each of 3 layers, with 5.5 lb rammer and

12 inch drop. 4 inch diameter mold

Sample No.	Elev or Depth	Classification	G	LL	PL	% > No. 4	% > 3/4 in.
81	1'-6"	Fine sandy CLAY (CL) w/ roots	2.66	49	25	0	0

Sample No.	31		
Natural water content, percent	22.4		
Optimum water content, percent	24.3		
Max dry density, lb/cu ft	95.7		

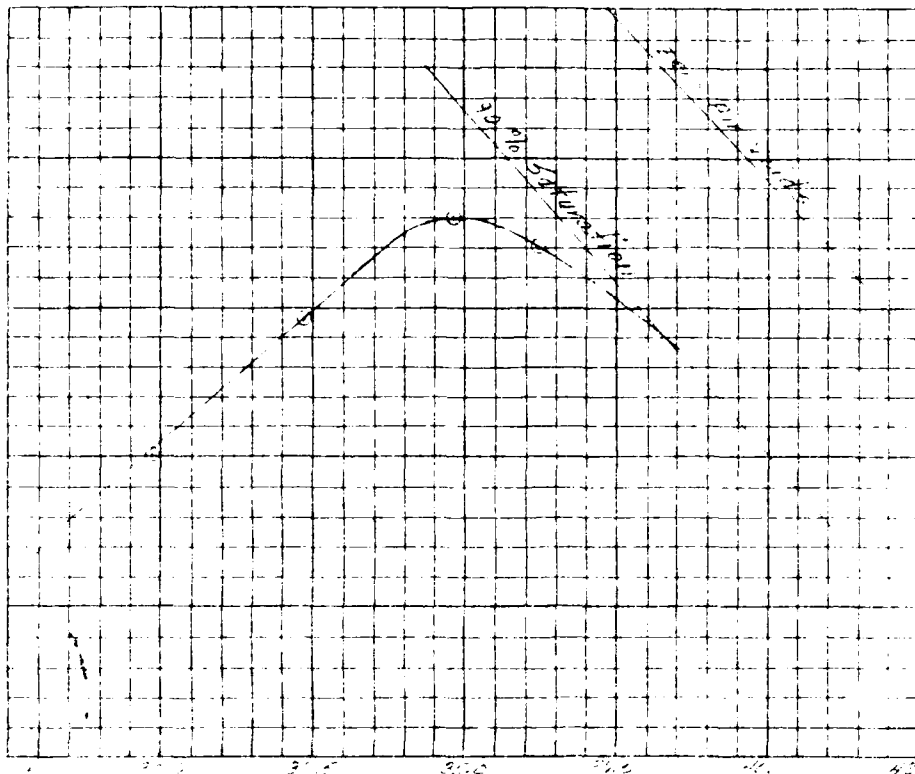
Remarks	Project	Cooper River Redirection
		St. Stephen, S. Carolina
	Area	TAILRACE CANAL
	Boring No.	T-11
	Date	December 1975
COMPACTION TEST REPORT		



ENG 2087

T-205

Dry density, lb/cu ft



Water content, percent of dry weight

Standard compaction test

Blows per inch of 2 layers, with 25 lb rammer and

and 7 inch diameter mold

Sample No.	Classification	G	LL	PL	$\frac{L}{P}$ No. 4	$\frac{L}{P}$ 3/4 in.
1	CLAY (CH)	100	90	20	5	2
2	CLAY (CH)					
3	CLAY (CH)					
4	CLAY (CH)					
5	CLAY (CH)					
6	CLAY (CH)					
7	CLAY (CH)					
8	CLAY (CH)					
9	CLAY (CH)					
10	CLAY (CH)					
11	CLAY (CH)					
12	CLAY (CH)					
13	CLAY (CH)					
14	CLAY (CH)					
15	CLAY (CH)					
16	CLAY (CH)					
17	CLAY (CH)					
18	CLAY (CH)					
19	CLAY (CH)					
20	CLAY (CH)					
21	CLAY (CH)					
22	CLAY (CH)					
23	CLAY (CH)					
24	CLAY (CH)					
25	CLAY (CH)					
26	CLAY (CH)					
27	CLAY (CH)					
28	CLAY (CH)					
29	CLAY (CH)					
30	CLAY (CH)					
31	CLAY (CH)					
32	CLAY (CH)					
33	CLAY (CH)					
34	CLAY (CH)					
35	CLAY (CH)					
36	CLAY (CH)					
37	CLAY (CH)					
38	CLAY (CH)					
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40	CLAY (CH)					
41	CLAY (CH)					
42	CLAY (CH)					
43	CLAY (CH)					
44	CLAY (CH)					
45	CLAY (CH)					
46	CLAY (CH)					
47	CLAY (CH)					
48	CLAY (CH)					
49	CLAY (CH)					
50	CLAY (CH)					
51	CLAY (CH)					
52	CLAY (CH)					
53	CLAY (CH)					
54	CLAY (CH)					
55	CLAY (CH)					
56	CLAY (CH)					
57	CLAY (CH)					
58	CLAY (CH)					
59	CLAY (CH)					
60	CLAY (CH)					
61	CLAY (CH)					
62	CLAY (CH)					
63	CLAY (CH)					
64	CLAY (CH)					
65	CLAY (CH)					
66	CLAY (CH)					
67	CLAY (CH)					
68	CLAY (CH)					
69	CLAY (CH)					
70	CLAY (CH)					
71	CLAY (CH)					
72	CLAY (CH)					
73	CLAY (CH)					
74	CLAY (CH)					
75	CLAY (CH)					
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77	CLAY (CH)					
78	CLAY (CH)					
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81	CLAY (CH)					
82	CLAY (CH)					
83	CLAY (CH)					
84	CLAY (CH)					
85	CLAY (CH)					
86	CLAY (CH)					
87	CLAY (CH)					
88	CLAY (CH)					
89	CLAY (CH)					
90	CLAY (CH)					
91	CLAY (CH)					
92	CLAY (CH)					
93	CLAY (CH)					
94	CLAY (CH)					
95	CLAY (CH)					
96	CLAY (CH)					
97	CLAY (CH)					
98	CLAY (CH)					
99	CLAY (CH)					
100	CLAY (CH)					

Sample No. 51

Natural water content, percent 41.0

Optimum water content, percent 24.8

Maximum density, lb/cu ft 12.5

Remarks:

Project COOPER RIVER BRIDGE

ST. STEPHEN, S. CAROLINA

Area TRAIL BRIDGE CHANGE

Boring No. T-17 Date 10-1-55

COMPACTION TEST REPORT

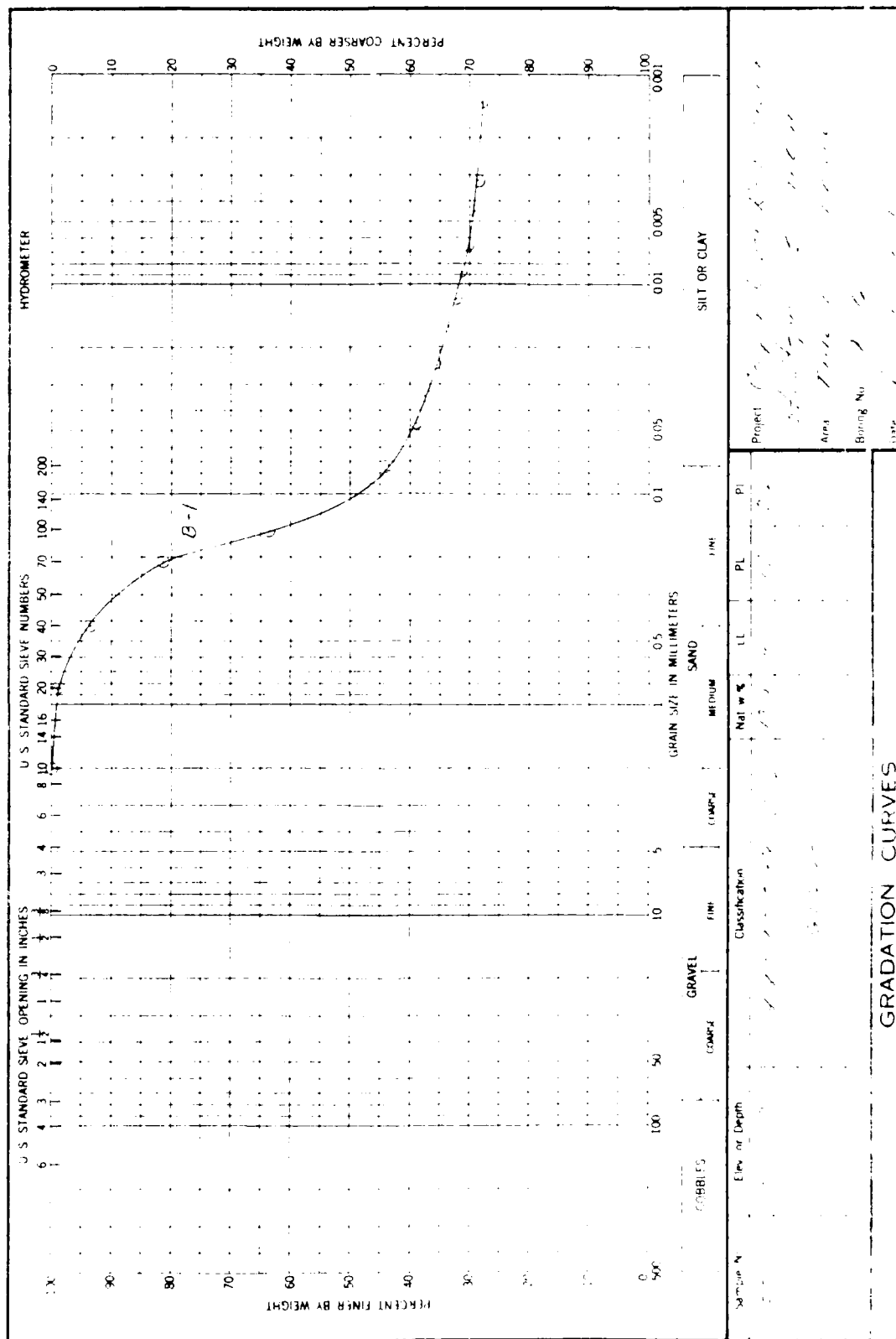
FORM NO. 200
JULY 1955

2001

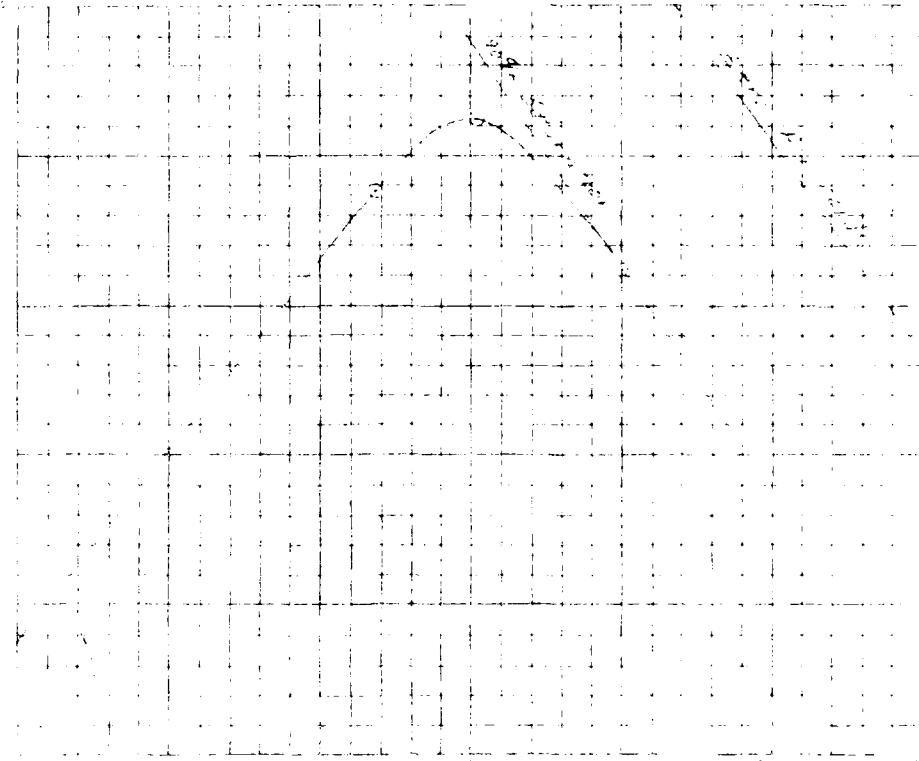
PREVIOUS EDITIONS ARE OBSOLETE

(TRANSLUCENT)

T-206 T-202



Dry Density, lb/cu ft



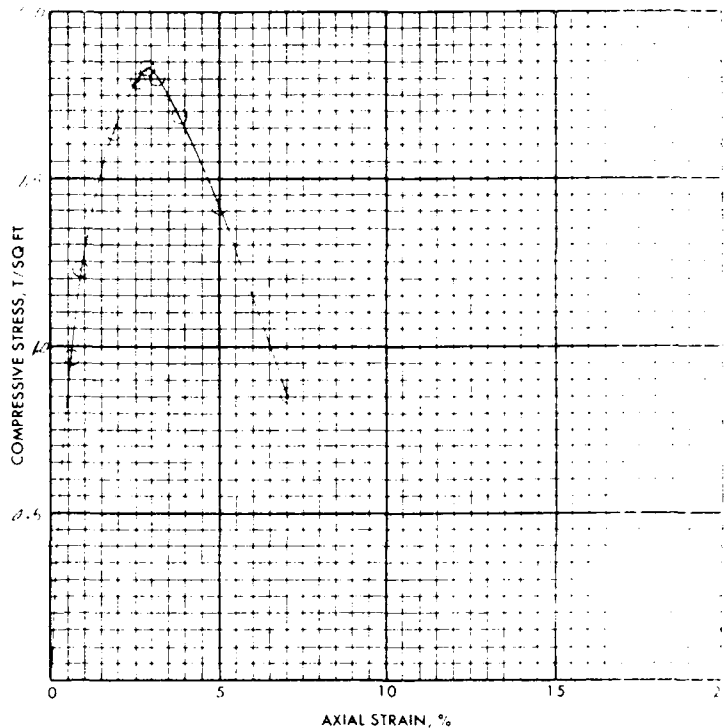
Water content, %

1. Name of project: _____ 2. Location: _____ 3. Date: _____		4. Classification: _____ 5. Method of test: _____	
6. Description of soil: _____ 7. Moisture content, %: _____ 8. Liquid limit, %: _____ 9. Plastic limit, %: _____ 10. Shrinkage limit, %: _____		11. Maximum dry density, lb/cu ft: _____ 12. Optimum moisture content, %: _____ 13. Air voids, %: _____ 14. Degree of saturation, %: _____	
15. Name of engineer: _____ 16. Name of operator: _____ 17. Name of checker: _____		18. Name of supervisor: _____ 19. Name of witness: _____ 20. Name of recorder: _____	

COMPACTION TEST REPORT

7-210 7-206

FAILURE SKETCHES



TEST NO

TYPE OF SPECIMEN

WATER CONTENT

w

27.1

VOID RATIO

e

0.911

SATURATION

S

0.97

DRY DENSITY, LB/CU FT

γ_d

86.4

TIME TO FAILURE, MIN

t

2.8

UNCONFINED COMPRESSIVE STRENGTH, T/SQ FT

q

1.83

UNDRAINED SHEAR STRENGTH, T/SQ FT

s

—

SENSITIVITY RATIO

S

—

INITIAL SPECIMEN DIAMETER, IN

D

1.41

INITIAL SPECIMEN HEIGHT, IN

H

3.15

CLASSIFICATION

LL

PI

PI

G

REMARKS

PROJECT

AREA

BORING NO

SAMPLE NO

DEPTH

DATE

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

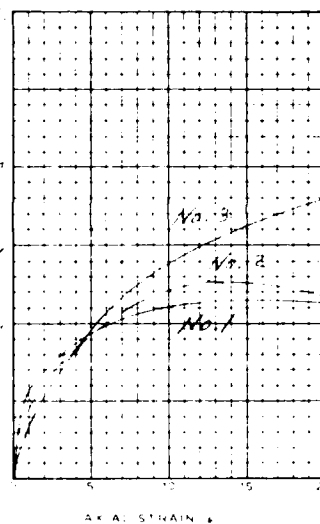
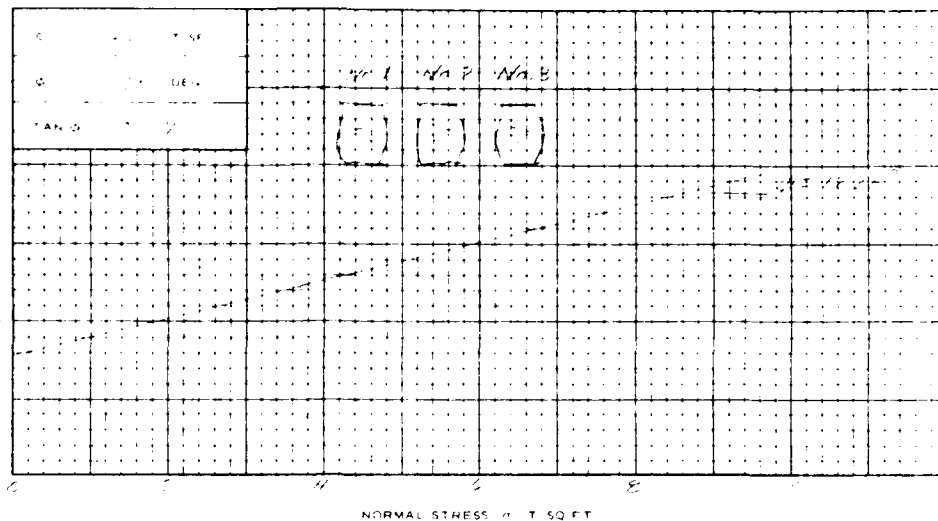
1 M 1110 2 1966

TRANSMITTENT

PLATE XL

T-211

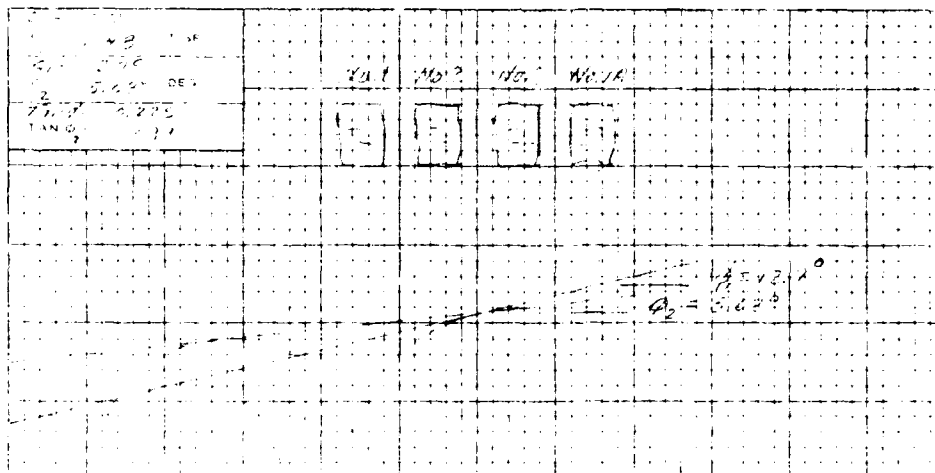
T-207



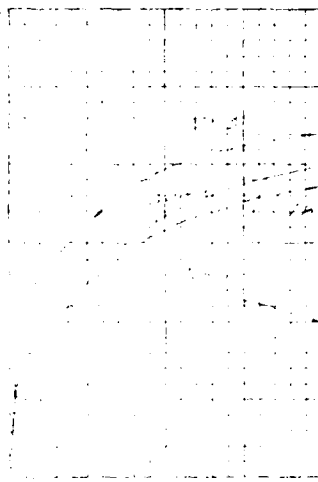
SPECIMEN NO		1	2	3	
INITIAL	WATER CONTENT, %	w_0	22.1	22.1	22.1
	DRY DENSITY LB/ CU FT	ρ_d	127.1	127.1	127.1
	SATURATION, %	S_0	22.1	22.1	22.1
	VOID RATIO	e_0	1.221	1.221	1.221
BEFORE SHEAR	WATER CONTENT, %	w_c			
	DRY DENSITY LB/ CU FT	ρ_d			
	SATURATION, %	S_c			
	VOID RATIO	e_c			
	FINAL BACK PRESSURE, T/ SQ FT	U_0			
MIN. & PRINCIPAL STRESS, T/ SQ FT		σ_3	1.00	1.00	1.00
MAXIMUM DEVIATOR STRESS, T/ SQ FT		MAX	4.64	4.64	4.64
TIME TO FAILURE, MIN		t_f	24	24	24
TIME TO DEVIATOR STRESS, T/ SQ FT			4.64*	4.64*	4.64*
INITIAL DIAMETER IN		ϕ_0	1.42	1.42	1.42
INITIAL LENGTH IN		h_0	2.44	2.44	2.44

NAME: <u>JOHN E. DE WENS</u> <u>DATE: 10/10/68</u>	
GRADE: <u>1st Lt</u> <u>BRANCH: 1st Lt</u>	TYPE: <u>1st Lt</u> <u>DATE: 10/10/68</u>
PROJECT: <u>1st Lt</u> <u>1st Lt</u>	PROJECT: <u>1st Lt</u> <u>1st Lt</u>
BIRTH: <u>10/10/68</u> <u>10/10/68</u>	BIRTH: <u>10/10/68</u> <u>10/10/68</u>
ADDRESS: <u>1st Lt</u> <u>1st Lt</u>	ADDRESS: <u>1st Lt</u> <u>1st Lt</u>
ALL DATA: <u>1st Lt</u> <u>1st Lt</u>	ALL DATA: <u>1st Lt</u> <u>1st Lt</u>
TRIAXIAL COMPRESSION TEST REPORT	

TRIAXIAL COMPRESSION TEST REPORT



NORMAL STRESS, σ , % OF σ_{UT}

[illegible]

7-1

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File Case Control, Sept. 1960

8-11-74, 1500 ft. 5-11-74

11. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100. 2101. 2102. 2103. 2104. 2105. 2106. 2107. 2108. 2109. 2110. 2111. 2112. 2113. 2114. 2115. 2116. 2117. 2118. 2119. 2120. 2121. 2122. 2123. 2124. 2125. 2126. 2127. 2128. 2129. 2130. 2131. 2132. 2133. 2134. 2135. 2136. 2137. 2138. 2139. 2140. 2141. 2142. 2143. 2144. 2145. 2146. 2147. 2148. 2149. 2150. 2151. 2152. 2153. 2154. 2155. 2156. 2157. 2158. 2159. 2160. 2161. 2162. 2163. 2164. 2165. 2166. 2167. 2168. 2169. 2170. 2171. 2172. 2173. 2174. 2175. 2176. 2177. 2178. 2179. 2180. 2181. 2182. 2183. 2184. 2185. 2186. 2187. 2188. 2189. 2190. 2191. 2192. 2193. 2194. 2195. 2196. 2197. 2198. 2199. 2200. 2201. 2202. 2203. 2204. 2205. 2206. 2207. 2208. 2209. 2210. 2211. 2212. 2213. 2214. 2215. 2216. 2217. 2218. 2219. 2220. 2221. 2222. 2223. 2224. 2225. 2226. 2227. 2228. 2229. 2230. 2231. 2232. 2233. 2234. 2235. 2236. 2237. 2238. 2239. 2240. 2241. 2242. 2243. 2244. 2245. 2246. 2247. 2248. 2249. 2250. 2251. 2252. 2253. 2254. 2255. 2256. 2257. 2258. 2259. 2260. 2261. 2262. 2263. 2264. 2265. 2266. 2267. 2268. 2269. 2270. 2271. 2272. 2273. 2274. 2275. 2276. 2277. 2278. 2279. 2280. 2281. 2282. 2283. 2284. 2285. 2286. 2287. 2288. 2289. 2290. 2291. 2292. 2293. 2294. 2295. 2296. 2297. 2298. 2299. 2300. 2301. 2302. 2303. 2304. 2305. 2306. 2307. 2308. 2309. 2310. 2311. 2312. 2313. 2314. 2315. 2316. 2317. 2318. 2319. 2320. 2321. 2322. 2323. 2324. 2325. 2326. 2327. 2328. 2329. 2330. 2331. 2332. 2333. 2334. 2335. 2336. 2337. 2338. 2339. 2340. 2341. 2342. 2343. 2344. 2345. 2346. 2347. 2348. 2349. 2350. 2351. 2352. 2353. 2354. 2355. 2356. 2357. 2358. 2359. 2360. 2361. 2362. 2363. 2364. 2365. 2366. 2367. 2368. 2369. 2370. 2371. 2372. 2373. 2374. 2375. 2376. 2377. 2378. 2379. 2380. 2381. 2382. 2383. 2384. 2385. 2386. 2387. 2388. 2389. 2390. 2391. 2392. 2393. 2394. 2395. 2396. 2397. 2398. 2399. 2400. 2401. 2402. 2403. 2404. 2405. 2406. 2407. 2408. 2409. 2410. 2411. 2412. 2413. 2414. 2415. 2416. 2417. 2418. 2419. 2420. 2421. 2422. 2423. 2424. 2425. 2426. 2427. 2428. 2429. 2430. 2431. 2432. 2433. 2434. 2435. 2436. 2437. 2438. 2439. 2440. 2441. 2442. 2443. 2444. 2445. 2446. 2447. 2448. 2449. 2450. 2451. 2452. 2453. 2454. 2455. 2456. 2457. 2458. 2459. 2460. 2461. 2462. 2463. 2464. 2465. 2466. 2467. 2468. 2469. 2470. 2471. 2472. 2473. 2474. 2475. 2476. 2477. 2478. 2479. 2480. 2481. 2482. 2483. 2484. 2485. 2486. 2487. 2488. 2489. 2490. 2491. 2492. 2493. 2494. 2495. 2496. 2497. 2498. 2499. 2500. 2501. 2502. 2503. 2504. 2505. 2506. 2507. 2508. 2509. 2510. 2511. 2512. 2513. 2514. 2515. 2516. 2517. 2518. 2519. 2520. 2521. 2522. 2523. 2524. 2525. 2526. 2527. 2528. 2529. 2530. 2531. 2532. 2533. 2534. 2535. 2536. 2537. 2538. 2539. 2540. 2541. 2542. 2543. 2544. 2545. 2546. 2547. 2548. 2549. 2550. 2551. 2552. 2553. 2554. 2555. 2556. 2557. 2558. 2559. 2560. 2561. 2562. 2563. 2564. 2565. 2566. 2567. 2568. 2569. 2570. 2571. 2572. 2573. 2574. 2575. 2576. 2577. 2578. 2579. 2580. 2581. 2582. 2583. 2584. 2585. 2586. 2587. 2588. 2589. 2590. 2591. 2592. 2593. 2594. 2595. 2596. 2597. 2598. 2599. 2600. 2601. 2602. 2603. 2604. 2605. 2606. 2607. 2608. 2609. 2610. 2611. 2612. 2613. 2614. 2615. 2616. 2617. 2618. 2619. 2620. 2621. 2622. 2623. 2624. 2625. 2626. 2627. 2628. 2629. 2630. 2631. 2632. 2633. 2634. 2635. 2636. 2637. 2638. 2639. 2640. 2641. 2642. 2643. 2644. 2645. 2646. 2647. 2648. 2649. 2650. 2651. 2652. 2653. 2654. 2655. 2656. 2657. 2658. 2659. 2660. 2661. 2662. 2663. 2664. 2665. 2666. 2667. 2668. 2669. 2670. 2671. 2672. 2673

1. *Phragmites australis* (Cav.) Trin. ex Steud.

ALL CASES DEL 12/10/76

TRIAL 14. COMPRESSION TEST REPORT

TRIAL 14. COMPRESSION TEST REPORT

T-214 T-40

F215 7-2-1

Figure 1

TEST NO. 1000

DATE 10/1/61

LABORATORY

NORMAL STRESS (lb./sq. ft.)

| SPECIMEN NO. | | 1 | 2 | 3 |
|--------------|--------------------------------------|------|------|------|
| GENERAL | WATER CONTENT | 40 | 38 | 35 |
| | DENSITY (lb./cu. ft.) | 120 | 118 | 115 |
| | SATURATION | 80 | 78 | 75 |
| | VOID RATIO | 0.75 | 0.72 | 0.68 |
| SPECIFIC | WATER CONTENT | 40 | 38 | 35 |
| | DENSITY (lb./cu. ft.) | 120 | 118 | 115 |
| | SATURATION | 80 | 78 | 75 |
| | VOID RATIO | 0.75 | 0.72 | 0.68 |
| STRESS | MINOR PRINCIPAL STRESS (lb./sq. ft.) | 0 | 0 | 0 |
| | MAJOR PRINCIPAL STRESS (lb./sq. ft.) | 40 | 40 | 40 |
| | DEVIATOR STRESS (lb./sq. ft.) | 40 | 40 | 40 |
| | MOISTURE RATIO | 40 | 38 | 35 |

TEST NO. 1000

DATE 10/1/61

LABORATORY

TEST NO. 1001

DATE 10/1/61

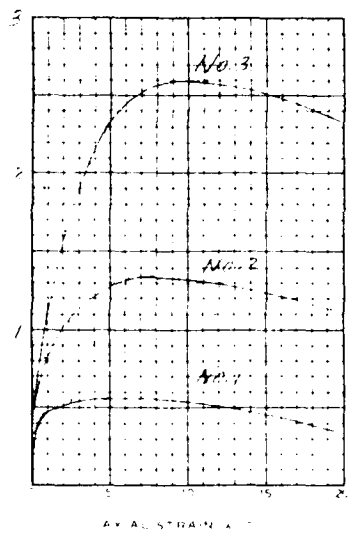
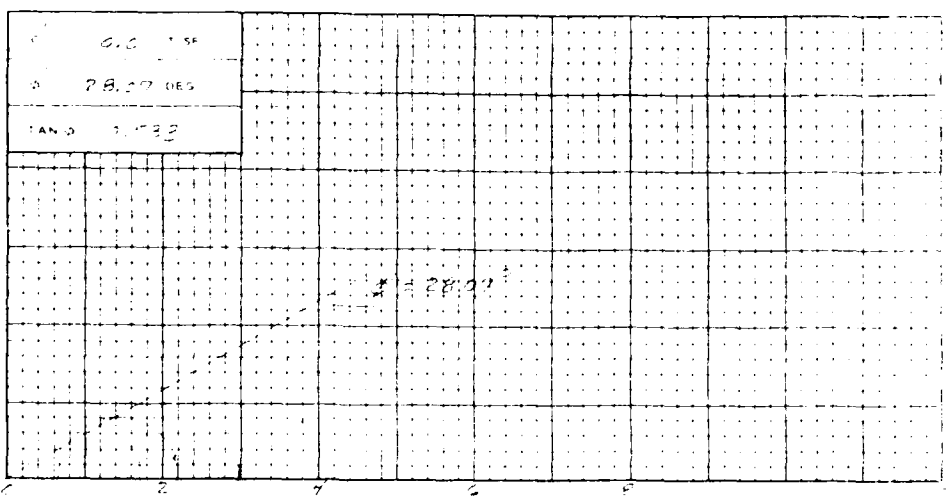
LABORATORY

TRANSFERRING

FM 111-1-19061

T-216 T-212

SHEET 3 OF 2



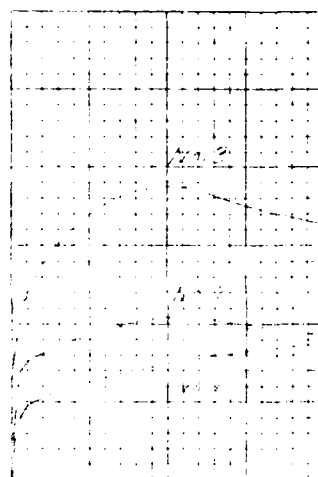
| SPECIMEN NO. | | 1 | 2 | 3 |
|--|----------------------------------|---------------------------------|------|------|
| INITIAL | WATER CONTENT % | W ₀ | 22.2 | |
| | DRY DENSITY LB/CU FT | ρ _d | 10.7 | 10.8 |
| | SATURATION % | S ₀ | | |
| | VOID RATIO | e ₀ | | |
| BEFORE SHEAR | WATER CONTENT % | W _c | | |
| | DRY DENSITY LB/CU FT | ρ _d | | |
| | SATURATION % | S _c | | |
| | VOID RATIO | e _c | | |
| | FINAL BACK PRESSURE (T) SO FT | u ₀ | | |
| | MIN. REPRINGING STRESS (T) SO FT | σ ₃ | 2.2 | 0.14 |
| MAXIMUM DEVIATOR STRESS (T) SO FT | | σ ₁ - σ ₃ | | |
| TIME t ₁ - t ₂ MIN | | t ₁ | | |
| WATER DEL. AT MIN. STRESS (T) SO FT | | Δw | | |
| MOISTURE RATIO | | w | 22.0 | 22.0 |
| INITIAL DIAMETER IN | | d ₀ | 0.4 | 0.4 |

EXPLANATION: EQUIPMENT: *FLUID & PNEUMATIC* *CLAY (CH)*

| | | | | | |
|--|---------|--|---------|----------------------------------|---------------------|
| NO. 31 | REMARKS | NO. 31 | REMARKS | TYPE OF SPECIMEN | DATE OF TEST |
| *Pore Pressure & water content
measured at 100% minor principal stress
samples collected & approx.
moisture content of 24% to 26% +
10% dry density of 10.4 g/cc.
(maximum density) | | THILLANCE CANAL, Cooper, E. 1000
Redirection of Stephen, S. 1000
T-14, 23, 25, 30
Combined
100% 0.0' - 7.0'
OPERATION: <i>NEU</i> | | TRIAXIAL COMPRESSION TEST REPORT | DATE: December 1965 |

T-217

N RMA; STRESS 0 1 SQ 1 Y

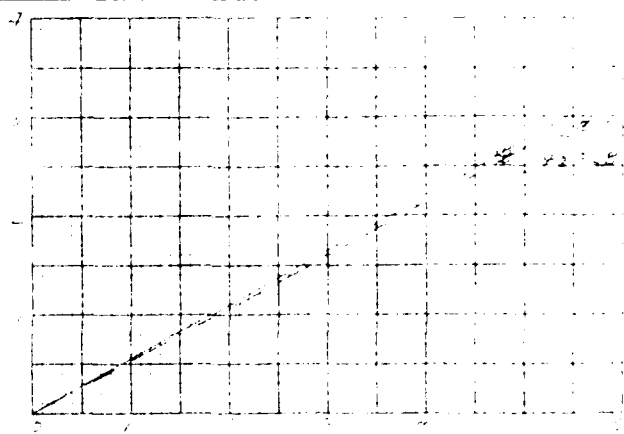
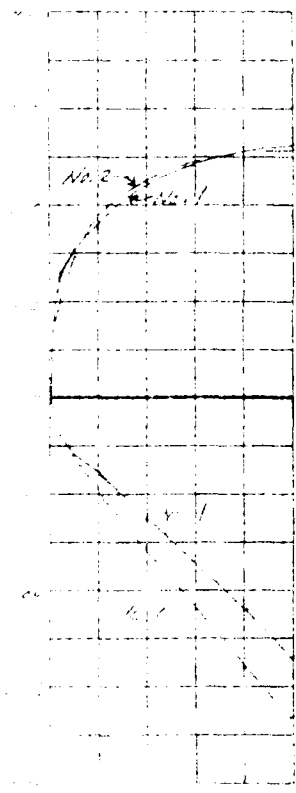
[illegible]

TRIAXIAL COMPRESSION TEST REPORT

TRANSLATION:

1900

F218-214



TEST NO. _____

WATER CONTENT _____

VOID RATIO _____

SATURATION _____

DRY UNIT WEIGHT _____

VOID RATIO AFTER CONSOLIDATION _____

TIME FOR STRENGTH DEVELOPMENT _____

WATER CONTENT _____

VOID RATIO _____

SATURATION _____

NORMAL STRESS x 100 FT _____

MAXIMUM SHEAR STRESS x 100 FT _____

ALL AT TIME _____

RATIO OF SHEAR STRESS TO NORMAL STRESS _____

STRESS RATIO _____

TEST PARAMETERS

TEST RESULTS

TEST COMMENTS

TEST CONCLUSION

TEST SIGNATURE

TEST DATE

TEST LOCATION

TEST METHOD

TEST EQUIPMENT

TEST OPERATOR

TEST REVIEWER

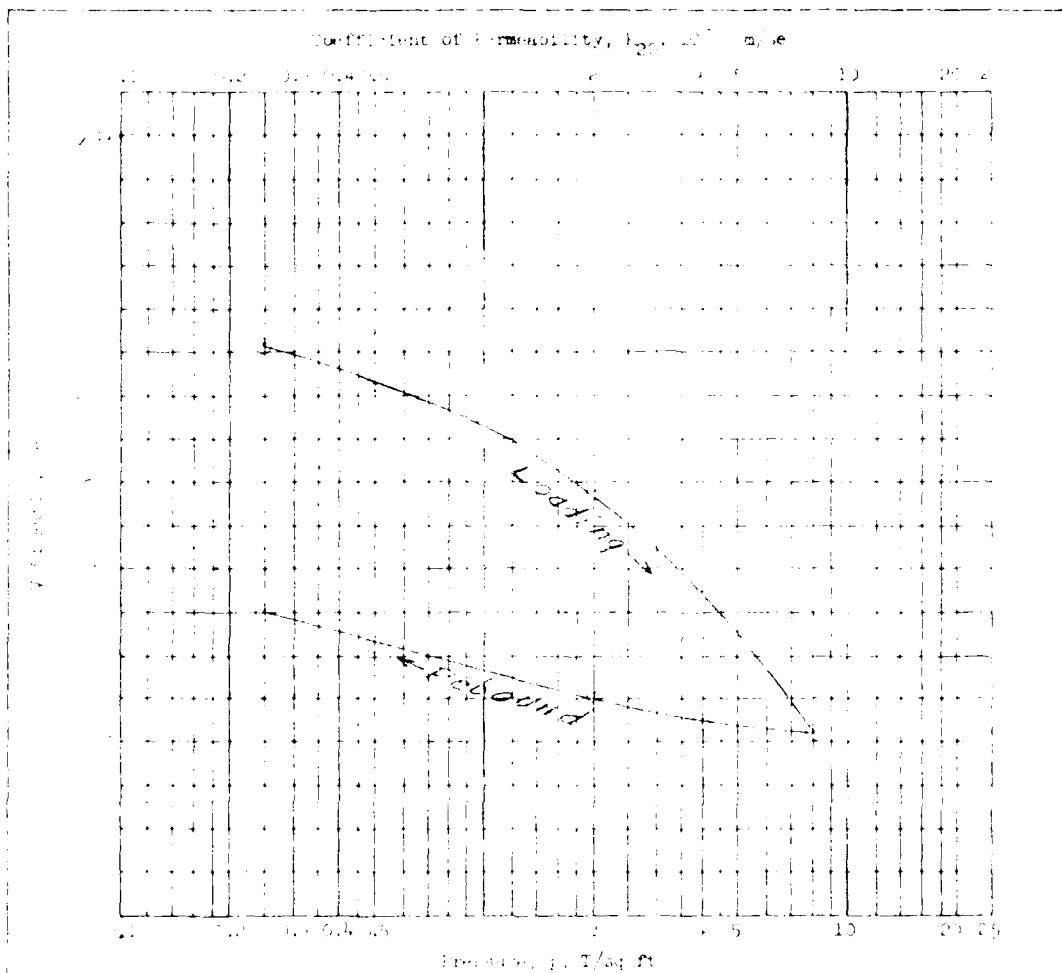
PROJECT _____

AREA _____

DESCRIPTION _____

DATE _____

TEST REPORT



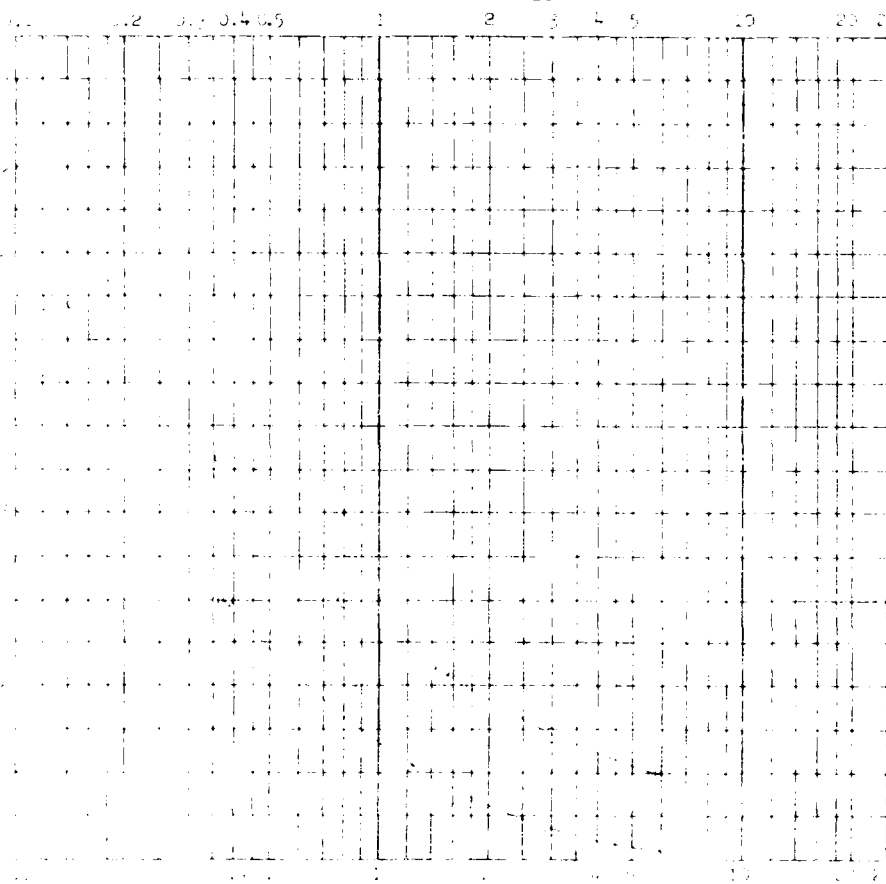
| Type of Specimen | | Before Test | | After Test | |
|--------------------------|---------|------------------------------|-------|------------|-------|
| Diagn | HR | Water Content, w_0 | $1/2$ | w_f | $1/2$ |
| void ratio, e_0 | T/sq ft | Solid Ratio, e_0 | $1/2$ | e_f | $1/2$ |
| void ratio, e_0 | T/sq ft | Saturation, S_0 | $1/2$ | S_f | $1/2$ |
| compression index, C_c | | Dry Density, γ_d | $1/2$ | | |
| void ratio, e_0 | | k_{90} , 10^{-10} cm/sec | $1/2$ | | |
| | | Project | $1/2$ | | |
| | | Sample No. | $1/2$ | | |
| | | Depth | $1/2$ | | |

CONSOLIDATION TEST REPORT

ENR 2090

T-221

Coefficient of Permeability, k_{20} , 10^{-7} cm/sec

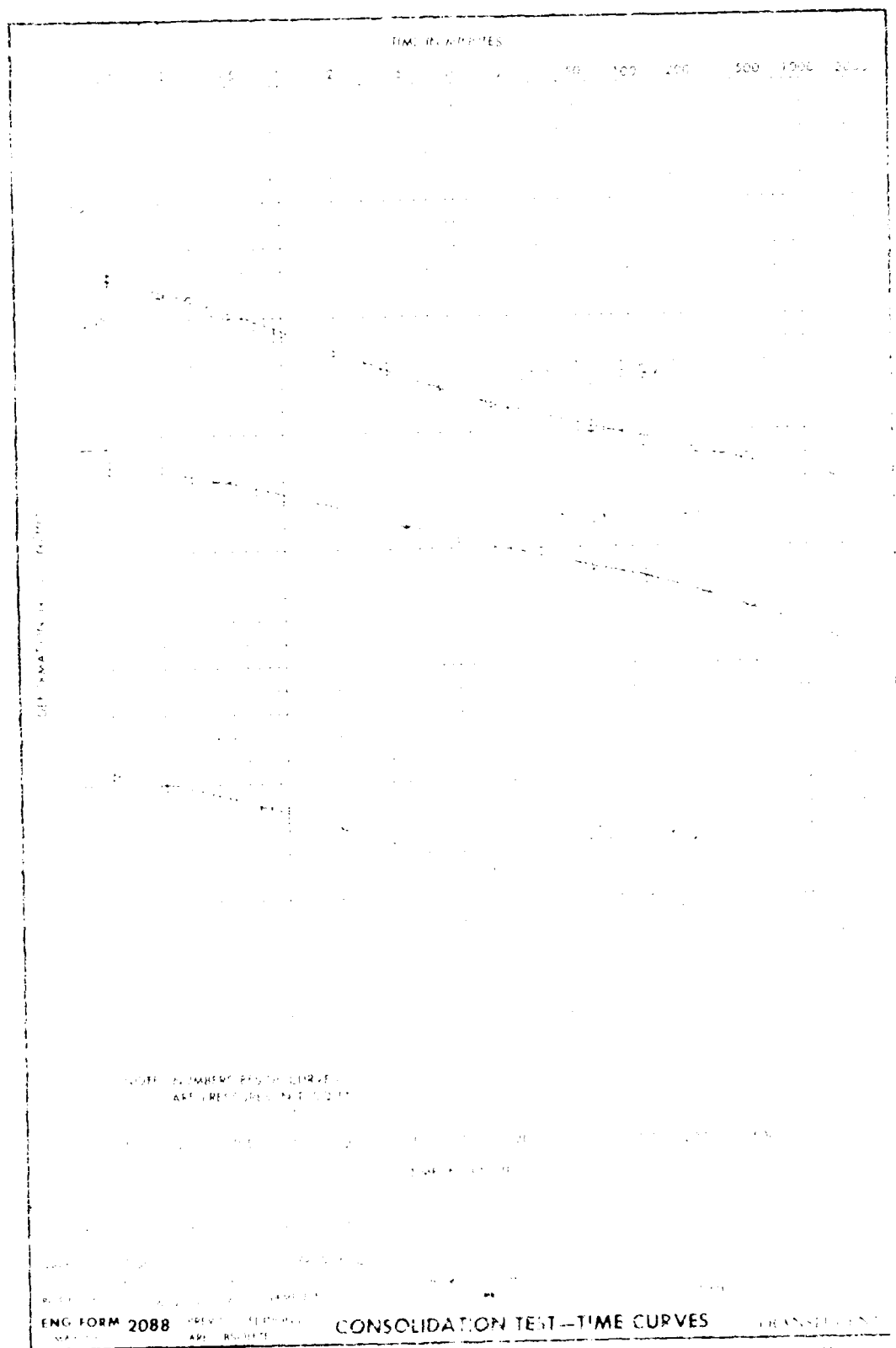


Pressure, p , Tons/cm²

| | Before Test | After Test |
|-------------------------|-------------|------------|
| Water Content, w_0 | | |
| Void Ratio, e_0 | | |
| Compression, C_c | | |
| Specific Gravity, G_s | | |
| Initial Pressure, p_0 | | |
| Final Pressure, p_f | | |
| Area, A | | |
| Length, L | | |
| Depth, D | | |
| Date | | |

CONSOLIDATION TEST REPORT

F-222 198



天

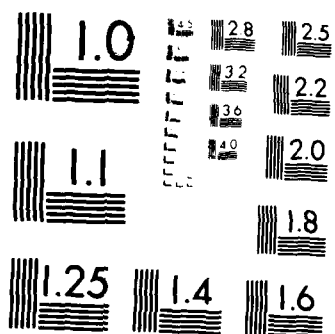
COOPER RIVER REDIVERSION PROJECT LAKE MOULTRIE AND
SANTÉE RIVER SOUTH CAR. (U) CORPS OF ENGINEERS
CHARLESTON SC CHARLESTON DISTRICT JUN 76

5/5

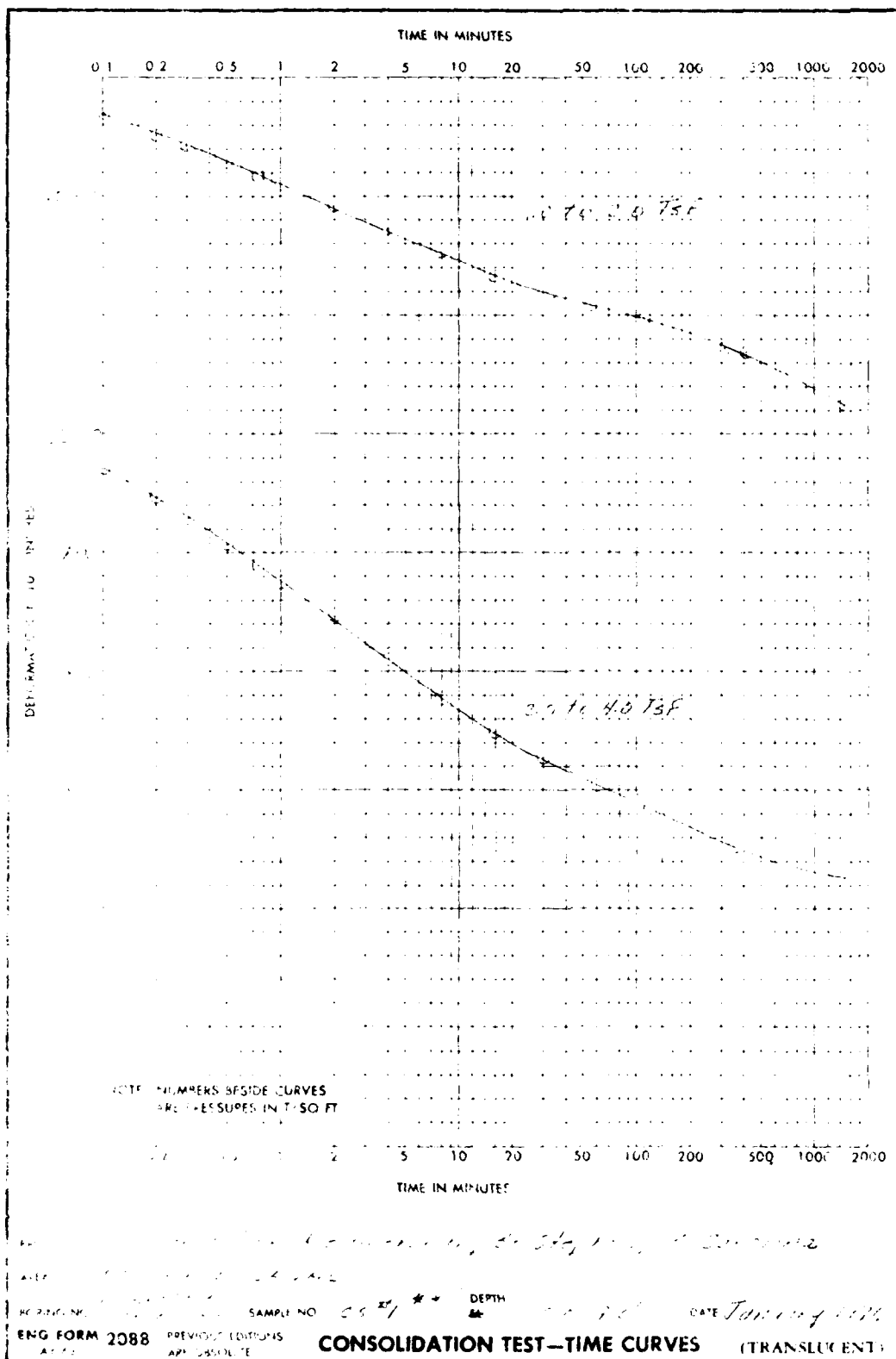
F/G 8/13

NL

[illegible]

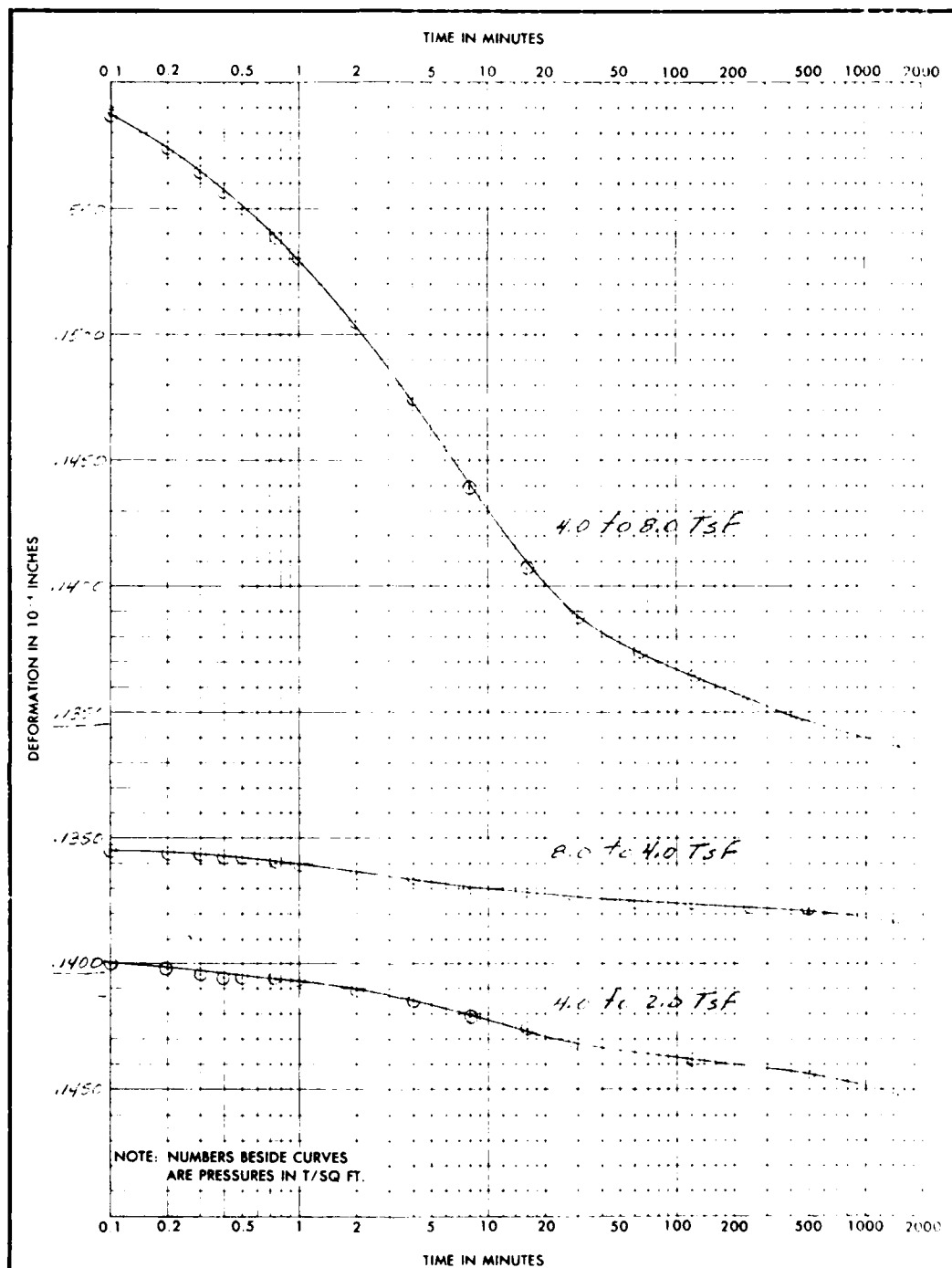


MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



Sample No. 25-1 **
 Depth 2.975 ft
 Date January 1966

T-224
 T-220



PROJECT *Cooper River Rediversion, St. Stephen, S. Carolina*

AREA *TAILRACE CANAL*

BORING NO *F-14, 23, 25, 30* SAMPLE NO *CS #1* ** DEPTH *0.0' - 9.0'* DATE *January 1976*

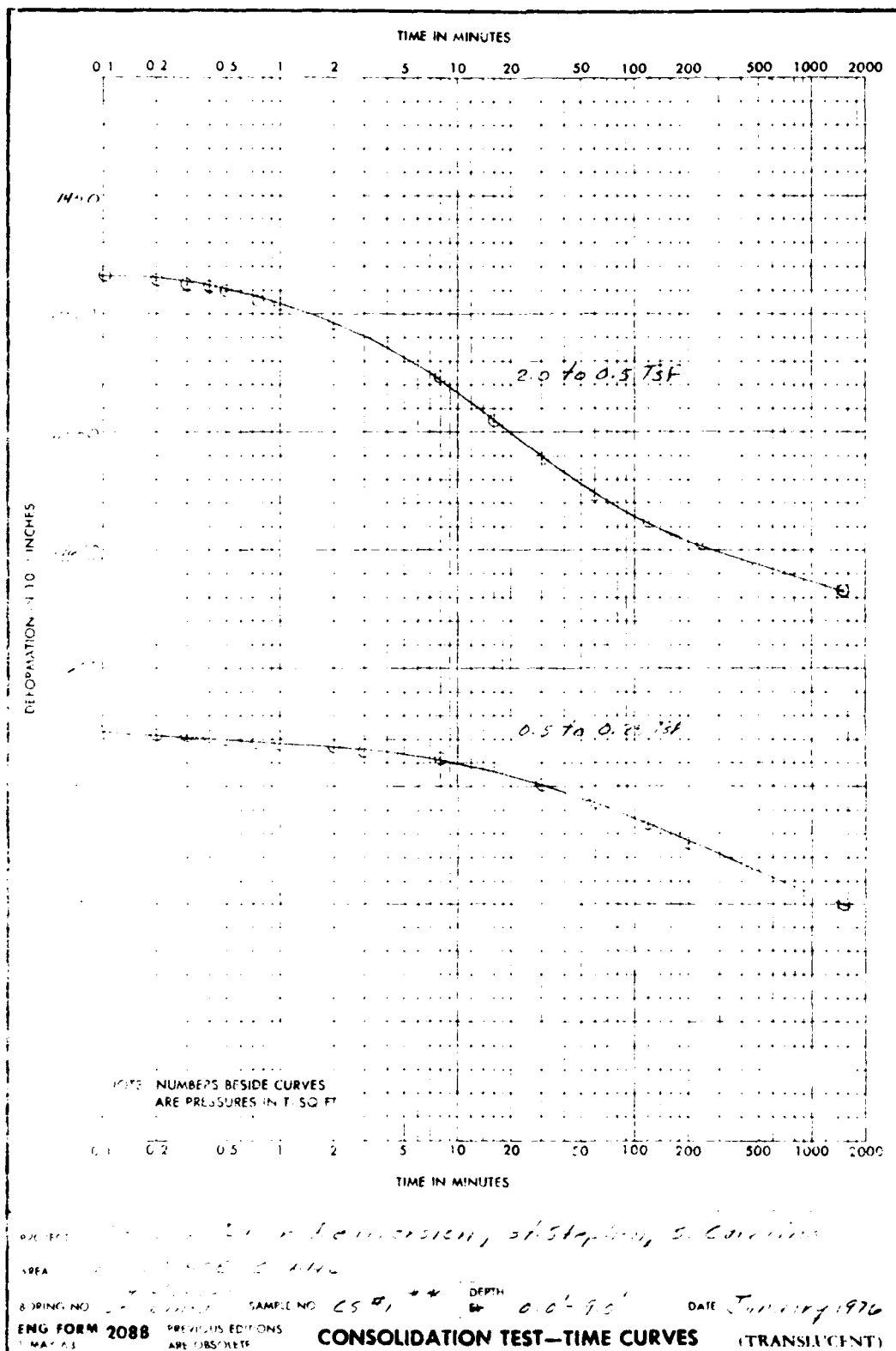
ENG FORM 2088 PREVIOUS EDITIONS ARE OBSOLETE

CONSOLIDATION TEST—TIME CURVES (TRANSLUCENT)

** *Remolded*
w_m = 27.7% (O.M.C. + 2%)
M_v = 86.9 Pcf (95% density)

Sheet 3 of 6

F-225
 T-221



PROJECT: *Coastal Defense, Charleston, S. Carolina*

AREA: *Coastal Defense*

BRING NO. *1* SAMPLE NO. *CS #1* DEPTH *0.0' - 9.0'* DATE *January 1976*

ENG. FORM 2088 PREVIOUS EDITIONS ARE OBSOLETE

CONSOLIDATION TEST—TIME CURVES (TRANSLUCENT)

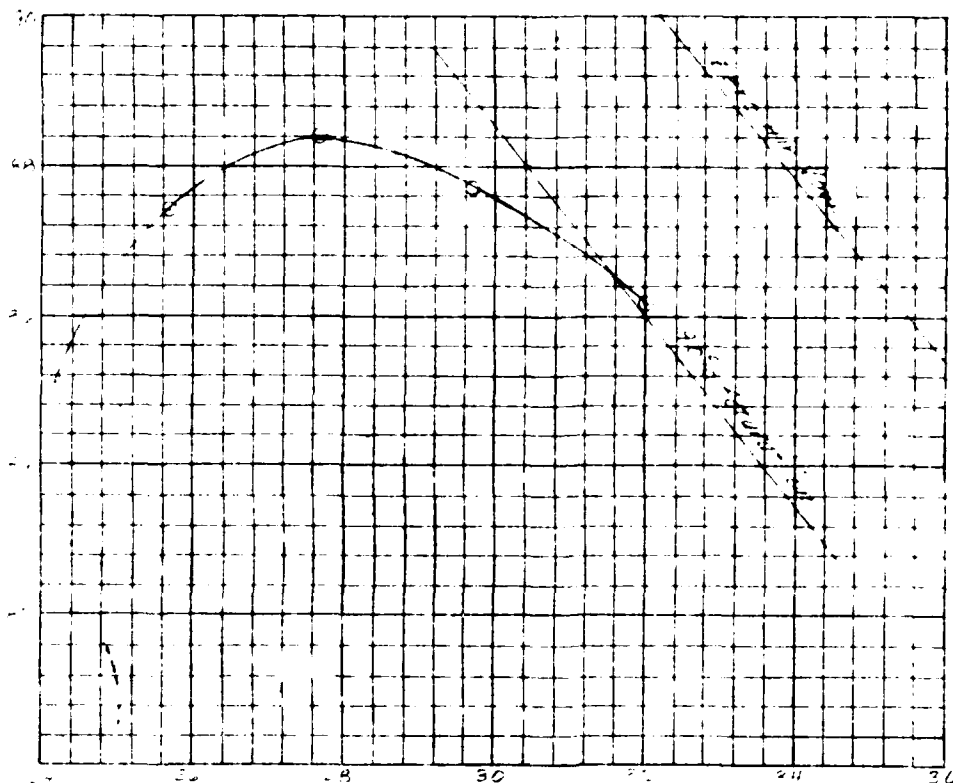
1 MAY 73

1.0' - 9.0' (95% density)

Sheet 6 of 6 T-226

T-222

Dry density, lb/cu ft



Water content, percent of dry weight

Proctor compaction test

Blows per each of 5 layers, with 10 lb rammer and

1/2 inch drop. 4 inch diameter mold

| Sample No. | Yield or Depth | Classification | G | LL | PL | % > No. 4 | % > 3/4 in. |
|--------------------------------|----------------|------------------------------|------|--------------------|----|-----------|-------------|
| CS #2 | | CLAY (CH) | 2.67 | 71 | 27 | 0 | 0 |
| Sample No. | | CS #2 | | | | | |
| Natural water content, percent | | | | | | | |
| Optimum water content, percent | | 27.8 | | | | | |
| Max dry density, lb/cu ft | | 38.4 | | | | | |
| Remarks * T-11B, T-17B, 1/2 | | Project Cooper River Portion | | | | | |
| 1/2 inch combined | | St. Stephen S. S. Inc. 1772 | | | | | |
| 1/2 inch combined | | Area TAILGATE CANAL | | | | | |
| Sample CS #2 | | Boring No. T-11B; T-17B * | | Date December 1775 | | | |
| COMPACTION TEST REPORT | | | | | | | |

ENG FORM 1 JUN 55

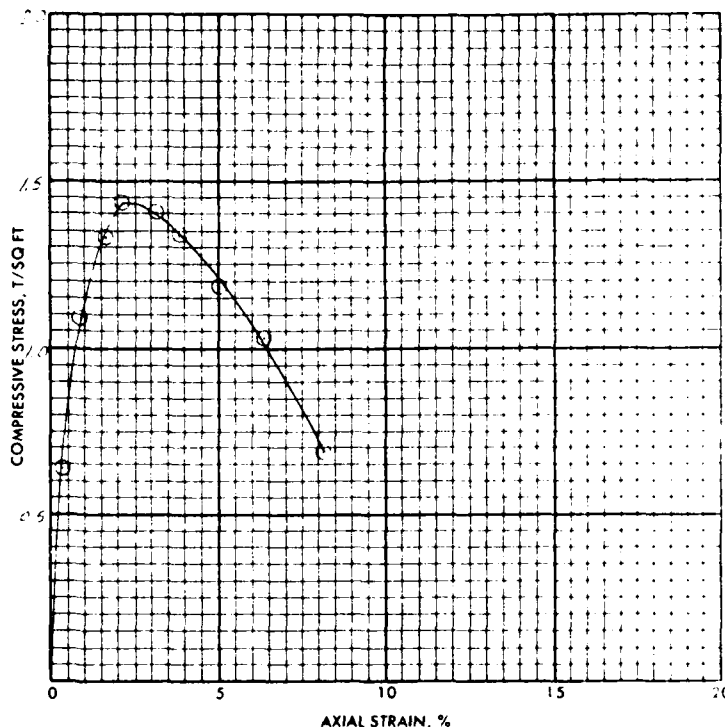
2091

PREVIOUS EDITIONS ARE OBSOLETE.

(TRANSLUCENT)

T-229
T-224

FAILURE SKETCHES



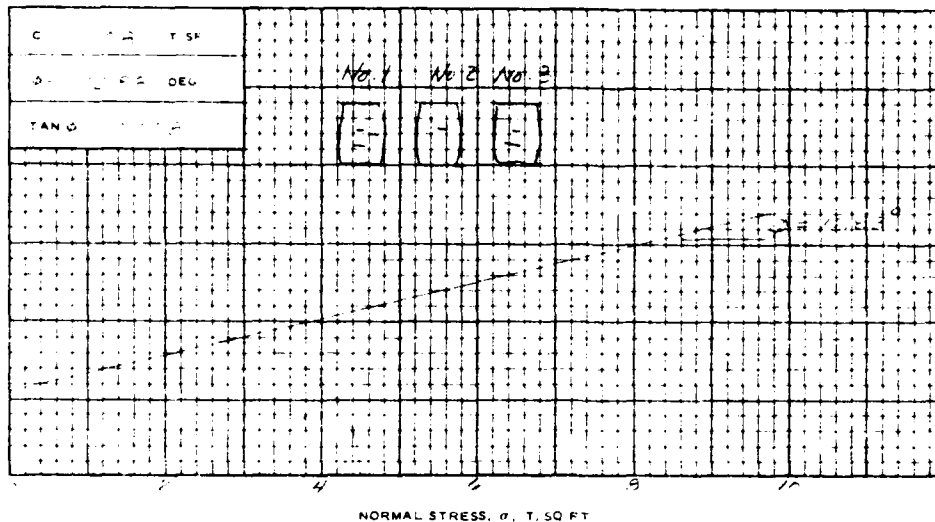
☐ CONTROLLED STRESS

☐ CONTROLLED STRAIN

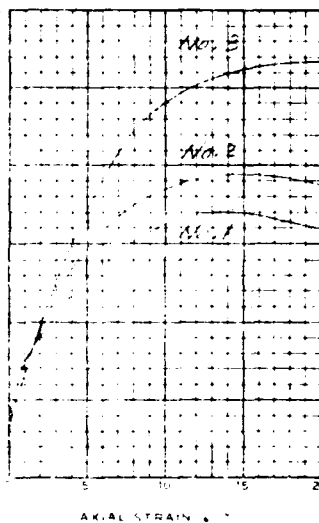
| | | | |
|--|-----------------------|--|---------------------------|
| TEST NO. | | 1 | |
| TYPE OF SPECIMEN | | Remolded | |
| INITIAL | WATER CONTENT | w _n | 27.9 % |
| | VOID RATIO | e _n | 1.002 |
| | SATURATION | S _n | 74.8 % |
| | DRY DENSITY, LB/CU FT | γ _d | 83.8 |
| TIME TO FAILURE, MIN | | t _f | 2 |
| UNCONFINED COMPRESSIVE STRENGTH, T/SQ FT | | q _u | 1.44 |
| UNDRAINED SHEAR STRENGTH, T/SQ FT | | s _u | — |
| SENSITIVITY RATIO | | S _i | — |
| INITIAL SPECIMEN DIAMETER, IN | | D | 1.40 |
| INITIAL SPECIMEN HEIGHT, IN | | H | 3.15 |
| CLASSIFICATION <i>Fine sandy clay (CH)</i> | | | |
| LL | 57 | PL | 27 |
| | | PI | 30 |
| | | G _s | 2.67 |
| REMARKS: <i>Sample remolded & prepared moisture content of 27.8% (corrected for dry density of 84.8 for 95% maximum density)</i> | | PROJECT <i>Copper River Refinement</i> | |
| | | ST. <i>Stephens S. C. incline</i> | |
| | | AREA <i>TAILRAKE CANAL</i> | |
| | | BORING NO. <i>T-11 T-17 combined</i> | SAMPLE NO. <i>CS #2</i> |
| | | DEPTH <i>0.0' - 6.0'</i> | DATE <i>February 1966</i> |

UNCONFINED COMPRESSION TEST REPORT

SHEAR STRESS, τ , T. SQ. FT.



AXIAL STRAIN, ϵ , %



| SPECIMEN NO. | | | 0 | 1 | 2 |
|--|---------------------------------|-----------------------|-------|-------|-------|
| INITIAL | WATER CONTENT, % | w_0 | 25.8 | 25.9 | 25.7 |
| | DRY DENSITY, LB. CU. FT. | γ_d | 1.21 | 1.22 | 1.23 |
| | SATURATION, % | s_0 | 32.0 | 32.9 | 32.7 |
| | VOID RATIO | e_0 | 1.25 | 1.26 | 1.24 |
| BEFORE SHEAR | WATER CONTENT, % | w_c | | | |
| | DRY DENSITY, LB. CU. FT. | γ_{dc} | | | |
| | SATURATION, % | s_c | | | |
| | VOID RATIO | e_c | | | |
| | FINAL BACK PRESSURE, T. SQ. FT. | u_0 | | | |
| MINOR PRINCIPAL STRESS, T. SQ. FT. | | σ_3 | 0.8 | 0.86 | 0.90 |
| MAXIMUM DEVIATOR STRESS, T. SQ. FT. | | $\sigma_1 - \sigma_3$ | 3.42 | 3.83 | 4.11* |
| TIME TO $\sigma_1 - \sigma_3$ MAX., MIN. | | t_1 | 4 | 4 | 5 |
| ULTIMATE DEVIATOR STRESS, T. SQ. FT. | | $\sigma_1 - \sigma_3$ | 3.41* | 3.87* | 4.11* |
| INITIAL DIAMETER, IN. | | d_0 | 1.42 | 1.41 | 1.41 |
| INITIAL HEIGHT, IN. | | h_0 | 3.15 | 3.15 | 3.15 |

TEST DESCRIPTION: *Fin. sand, CH (CH)*

TYPE OF SPECIMEN: *Pen. 11-1* TYPE OF TEST: *C*

PROJECT: *TRAILER, SNOW, Cooper River*

BORING NO.: *Combined* SAMPLE NO.: *CS #2*

DEPTH: *6.0'*

LABORATORY: *NED* DATE: *January, 1970*

TRIAXIAL COMPRESSION TEST REPORT

T-230
T-226

| C = 7.2 T SQ FT
φ = 21.5 DEG
TAN φ = 0.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|----------------|------|------|---|---|---------|-----------------|------|------|------|----------------------|-----|-----|-----|--------------|-----|-----|-----|------------|------|------|------|--------------|-----------------|--|--|--|----------------------|--|--|--|--------------|--|--|--|------------|--|--|--|-----------------------------|--|----------------|--|--|-------------------------------|--|----------------|-----|--|---------------------------------|--|----------------|-----|--|---------------------|--|----------------|----|--|----------------------------------|--|----------------|--|--|---------------------|--|----------------|------|--|-------------------|--|----------------|-----|--|
| | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">SPECIMEN NO.</th> <th>1</th> <th>2</th> <th>3</th> </tr> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">INITIAL</td> <td>WATER CONTENT %</td> <td>27.1</td> <td>27.7</td> <td>27.7</td> </tr> <tr> <td>DRY DENSITY LB CU FT</td> <td>122</td> <td>123</td> <td>124</td> </tr> <tr> <td>SATURATION %</td> <td>100</td> <td>100</td> <td>100</td> </tr> <tr> <td>VOID RATIO</td> <td>1.02</td> <td>1.00</td> <td>1.00</td> </tr> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">BEFORE SHEAR</td> <td>WATER CONTENT %</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DRY DENSITY LB CU FT</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SATURATION %</td> <td></td> <td></td> <td></td> </tr> <tr> <td>VOID RATIO</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">FINAL BULK PRESSURE T SQ FT</td> <td>U₀</td> <td></td> <td></td> </tr> <tr> <td colspan="2">MIN. PRINCIPAL STRESS T SQ FT</td> <td>σ₁</td> <td>1.0</td> <td></td> </tr> <tr> <td colspan="2">MAXIMUM DEVIATOR STRESS T SQ FT</td> <td>σ_d</td> <td>4.5</td> <td></td> </tr> <tr> <td colspan="2">TIME TO FAILURE MIN</td> <td>t_f</td> <td>15</td> <td></td> </tr> <tr> <td colspan="2">ULTIMATE DEVIATOR STRESS T SQ FT</td> <td>σ_d</td> <td></td> <td></td> </tr> <tr> <td colspan="2">INITIAL DIAMETER IN</td> <td>D₀</td> <td>1.42</td> <td></td> </tr> <tr> <td colspan="2">INITIAL HEIGHT IN</td> <td>H₀</td> <td>2.5</td> <td></td> </tr> </table> | SPECIMEN NO. | | 1 | 2 | 3 | INITIAL | WATER CONTENT % | 27.1 | 27.7 | 27.7 | DRY DENSITY LB CU FT | 122 | 123 | 124 | SATURATION % | 100 | 100 | 100 | VOID RATIO | 1.02 | 1.00 | 1.00 | BEFORE SHEAR | WATER CONTENT % | | | | DRY DENSITY LB CU FT | | | | SATURATION % | | | | VOID RATIO | | | | FINAL BULK PRESSURE T SQ FT | | U ₀ | | | MIN. PRINCIPAL STRESS T SQ FT | | σ ₁ | 1.0 | | MAXIMUM DEVIATOR STRESS T SQ FT | | σ _d | 4.5 | | TIME TO FAILURE MIN | | t _f | 15 | | ULTIMATE DEVIATOR STRESS T SQ FT | | σ _d | | | INITIAL DIAMETER IN | | D ₀ | 1.42 | | INITIAL HEIGHT IN | | H ₀ | 2.5 | |
| SPECIMEN NO. | | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INITIAL | WATER CONTENT % | 27.1 | 27.7 | 27.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DRY DENSITY LB CU FT | 122 | 123 | 124 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SATURATION % | 100 | 100 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | VOID RATIO | 1.02 | 1.00 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BEFORE SHEAR | WATER CONTENT % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DRY DENSITY LB CU FT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SATURATION % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | VOID RATIO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FINAL BULK PRESSURE T SQ FT | | U ₀ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MIN. PRINCIPAL STRESS T SQ FT | | σ ₁ | 1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MAXIMUM DEVIATOR STRESS T SQ FT | | σ _d | 4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TIME TO FAILURE MIN | | t _f | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ULTIMATE DEVIATOR STRESS T SQ FT | | σ _d | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INITIAL DIAMETER IN | | D ₀ | 1.42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INITIAL HEIGHT IN | | H ₀ | 2.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INSTRUMENTED <i>Hand</i> TEST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PREPARATION OF SPECIMENS <i>Hand 2 1/4 x 3 1/4 x 1 1/4</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PL 27
PL 30
PL 31 | TYPE OF SPECIMEN <i>Hand 100</i>
TYPE OF TEST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REMARKS <i>Hand 2 1/4 x 3 1/4 x 1 1/4</i>
<i>Sample moist to approx. 27.8% moisture content of 27.8% for 24 hours and dry density of 122 lb/cu ft (95% max. density).</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT <i>Hand 100</i>
REDUCTION OF STRESS <i>Hand 100</i>
BORING NO. <i>Hand 100</i> SAMPLE NO. <i>Hand 100</i>
DEPTH <i>Hand 100</i>
LABORATORY <i>Hand 100</i> DATE <i>Hand 100</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

 ENCL FORM NO. 2089
 REV. JUNE 1970

PREVIOUS EDITION IS OBSOLETE

TRANSLUCENT

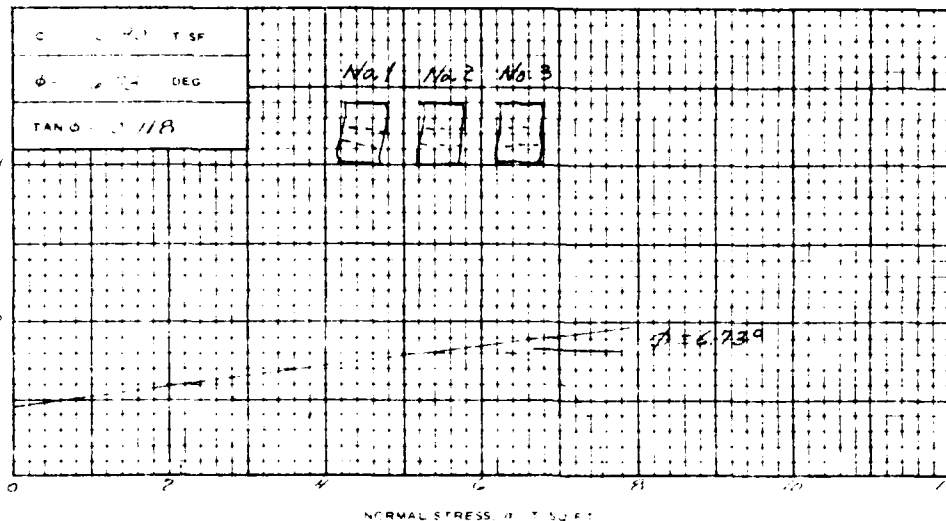
EM 1110-2-1906

TRIAXIAL COMPRESSION TEST REPORT

T-231

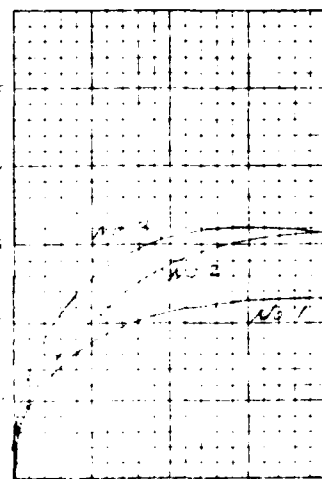
T-227

SHEAR STRESS, T, SOFT



NORMAL STRESS, T, SOFT

SHEAR STRESS, T, SOFT



| SPECIMEN NO. | | 1 | 2 | 3 |
|--------------|-----------------------|------|------|------|
| INITIAL | WATER CONTENT, % | 29.4 | 29.8 | 27.8 |
| | DRY DENSITY, LB/CU FT | 94.0 | 94.0 | 94.5 |
| | SATURATION, % | 80.2 | 80.2 | 81.2 |
| | VOID RATIO | 1.24 | 1.24 | 1.18 |
| DEFORMED | WATER CONTENT, % | | | |
| | DRY DENSITY, LB/CU FT | | | |
| | SATURATION, % | | | |
| | VOID RATIO | | | |
| CONFINING | STRESS, T, SOFT | | | |
| | STRESS, T, SOFT | | | |
| | STRESS, T, SOFT | | | |
| | STRESS, T, SOFT | | | |
| FAILURE | STRESS, T, SOFT | | | |
| | STRESS, T, SOFT | | | |
| | STRESS, T, SOFT | | | |
| | STRESS, T, SOFT | | | |
| FAILURE | STRESS, T, SOFT | | | |
| | STRESS, T, SOFT | | | |
| | STRESS, T, SOFT | | | |
| | STRESS, T, SOFT | | | |

SKAL STRAIN

Strain

TEST

Fine sand CLAY (CL)

25 27 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

TYPE OF SPECIMEN *Triaxial*TYPE OF TEST *R*

Remarks: *Sample corrected to approx. moisture content of 27.8% (same as No. 1) and dry density of 94.0 pcf. (95% maximum density)*

PROJECT *TAILRACE CANAL, Cooper River**Rediversion, St. Stephen, S. Carolina*BORING NO. *FH 17*SAMPLE NO. *CS #2*DEPTH *0.6' - 6.0'*LABORATORY *NED*DATE *December 1975*

TRIAXIAL COMPRESSION TEST REPORT

1. This form is to be used for all triaxial compression tests.

TRANSLUCENT

(EM 1110-2-1906)

T-232

T-178

| | |
|---|-----------------------|
| C 0.03 T SF
Ø 17.1 DEG
TANG 0.308 | No. 1 No. 2 No. 3 |
|---|-----------------------|

SHEAR STRESS, τ , T/SQ FT

NORMAL STRESS, σ , T/SQ FT

| SPECIMEN NO. | | 1 | 2 | 3 |
|----------------------------------|----------------------|-------|-------|-------|
| INITIAL | WATER CONTENT % | 22.2 | 21.4 | 21.1 |
| | DRY DENSITY LB/CU FT | 84.2 | 84.1 | 84.2 |
| | SATURATION % | 91.0 | 91.0 | 91.0 |
| | VOID RATIO | 0.788 | 0.788 | 0.788 |
| BEFORE SHEAR | WATER CONTENT % | 35.2 | 32.6 | 31.1 |
| | DRY DENSITY LB/CU FT | 82.2 | 82.5 | 81.0 |
| | SATURATION % | 100 | 100 | 100 |
| | VOID RATIO | 1.48 | 1.40 | 1.35 |
| FINAL BACK PRESSURE T/SQ FT | | 7.22 | 7.22 | 7.22 |
| MIN. DRAIN. PRESS. T/SQ FT | | 1.05 | 1.16 | 1.16 |
| MAXIMUM DEVIATOR STRESS T/SQ FT | | 0.93 | 1.40 | 3.02 |
| TIME TO FAILURE MIN | | 74 | 50 | 63 |
| ULTIMATE DEVIATOR STRESS T/SQ FT | | 0.93* | 1.60* | — |
| INITIAL DIAMETER IN | | 1.42 | 1.42 | 1.42 |
| INITIAL HEIGHT IN | | 3.5 | 3.15 | 3.15 |

| | | | | |
|--|-------|-------|---------|---|
| CONTROLLED <u>strain</u> TEST | | | | |
| DESCRIPTION OF SPECIMENS <u>Fine sandy CLAY (CH)</u> | | | | |
| Lot 57 | Pl 27 | Pi 30 | Ln 2.69 | TYPE OF SPECIMEN <u>Remolded</u> |
| REMARKS * <u>Strained @ 15% axial strain</u>
<u>Samples remolded to approx</u>
<u>moisture content of 27.8% (0.11</u>
<u>+ 25% and dry density of 84.0 Pcf.</u>
<u>(95% maximum density).</u>
<u>See Sheet 2 of 2</u> | | | | PROJECT <u>THILPAC CANAL</u>
<u>Rediversion, St. Stephen, S. Cal.</u>
BORING NO. <u>T-17</u>
(Combined)
DEPTH <u>0.0' - 6.0'</u>
LABORATORY <u>NED</u> |
| | | | | TYPE OF TEST <u>1</u>
SAMPLE NO. <u>23</u>
DATE <u>Jan 1970</u> |

FORM NO. 2089
REV. JUNE 1970

PREVIOUS EDITION OBSOLETE

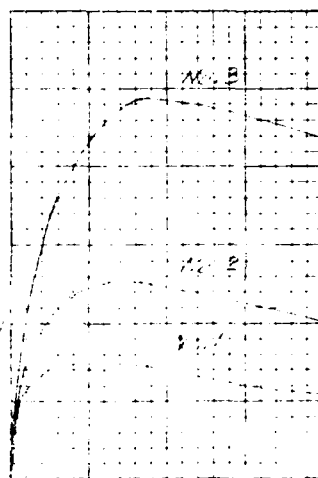
TRANSLUCENT

(EM 1110-2-106)

T-233

$\sigma' = 6.0$ T.SF
 $\phi' = 29.5^\circ$ DEG
 $\tan \phi' = 0.565$

EFFECTIVE NORMAL STRESS, σ , T. C.F.T.



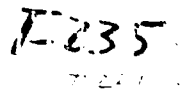
| SPECIMEN NO. | | 1 | 2 | 3 |
|-----------------------|--------------------|-----|-----|-----|
| INITIAL | WATER CONTENT, % | 46 | 45 | 44 |
| | DRY DENSITY, LB/CF | 125 | 125 | 125 |
| | SATURATION, % | | | |
| | VOID RATIO | | | |
| FIELD | WATER CONTENT, % | | | |
| | DRY DENSITY, LB/CF | | | |
| | SATURATION, % | | | |
| | VOID RATIO | | | |
| FINISH GRADE | | | | |
| PRESSURE, PSI | | | | |
| MIN. RIGIDITY | | | | |
| STRESS, LB/FT | | | | |
| MAXIMUM STRESS | | | | |
| STRESS, LB/FT | | | | |
| TIME, MIN. | | | | |
| TESTER'S NAME | | | | |
| TESTER'S SIGNATURE | | | | |
| TESTER'S TITLE | | | | |
| TESTER'S ORGANIZATION | | | | |
| TESTER'S ADDRESS | | | | |
| TESTER'S PHONE | | | | |
| TESTER'S FAX | | | | |
| TESTER'S E-MAIL | | | | |
| TESTER'S WEBSITE | | | | |
| TESTER'S NOTES | | | | |

100-37014-24A(10)

| |
|---|
| 57 57 2 2.67
REMARKS: 1. 1st test run at 1000 RPM
2. 2nd test run at 1000 RPM
3. 3rd test run at 1000 RPM
4. 4th test run at 1000 RPM
5. 5th test run at 1000 RPM
6. 6th test run at 1000 RPM
7. 7th test run at 1000 RPM
8. 8th test run at 1000 RPM
9. 9th test run at 1000 RPM
10. 10th test run at 1000 RPM
11. 11th test run at 1000 RPM
12. 12th test run at 1000 RPM
13. 13th test run at 1000 RPM
14. 14th test run at 1000 RPM
15. 15th test run at 1000 RPM
16. 16th test run at 1000 RPM
17. 17th test run at 1000 RPM
18. 18th test run at 1000 RPM
19. 19th test run at 1000 RPM
20. 20th test run at 1000 RPM
21. 21st test run at 1000 RPM
22. 22nd test run at 1000 RPM
23. 23rd test run at 1000 RPM
24. 24th test run at 1000 RPM
25. 25th test run at 1000 RPM
26. 26th test run at 1000 RPM
27. 27th test run at 1000 RPM
28. 28th test run at 1000 RPM
29. 29th test run at 1000 RPM
30. 30th test run at 1000 RPM
31. 31st test run at 1000 RPM
32. 32nd test run at 1000 RPM
33. 33rd test run at 1000 RPM
34. 34th test run at 1000 RPM
35. 35th test run at 1000 RPM
36. 36th test run at 1000 RPM
37. 37th test run at 1000 RPM
38. 38th test run at 1000 RPM
39. 39th test run at 1000 RPM
40. 40th test run at 1000 RPM
41. 41st test run at 1000 RPM
42. 42nd test run at 1000 RPM
43. 43rd test run at 1000 RPM
44. 44th test run at 1000 RPM
45. 45th test run at 1000 RPM
46. 46th test run at 1000 RPM
47. 47th test run at 1000 RPM
48. 48th test run at 1000 RPM
49. 49th test run at 1000 RPM
50. 50th test run at 1000 RPM
51. 51st test run at 1000 RPM
52. 52nd test run at 1000 RPM
53. 53rd test run at 1000 RPM
54. 54th test run at 1000 RPM
55. 55th test run at 1000 RPM
56. 56th test run at 1000 RPM
57. 57th test run at 1000 RPM
58. 58th test run at 1000 RPM
59. 59th test run at 1000 RPM
60. 60th test run at 1000 RPM
61. 61st test run at 1000 RPM
62. 62nd test run at 1000 RPM
63. 63rd test run at 1000 RPM
64. 64th test run at 1000 RPM
65. 65th test run at 1000 RPM
66. 66th test run at 1000 RPM
67. 67th test run at 1000 RPM
68. 68th test run at 1000 RPM
69. 69th test run at 1000 RPM
70. 70th test run at 1000 RPM
71. 71st test run at 1000 RPM
72. 72nd test run at 1000 RPM
73. 73rd test run at 1000 RPM
74. 74th test run at 1000 RPM
75. 75th test run at 1000 RPM
76. 76th test run at 1000 RPM
77. 77th test run at 1000 RPM
78. 78th test run at 1000 RPM
79. 79th test run at 1000 RPM
80. 80th test run at 1000 RPM
81. 81st test run at 1000 RPM
82. 82nd test run at 1000 RPM
83. 83rd test run at 1000 RPM
84. 84th test run at 1000 RPM
85. 85th test run at 1000 RPM
86. 86th test run at 1000 RPM
87. 87th test run at 1000 RPM
88. 88th test run at 1000 RPM
89. 89th test run at 1000 RPM
90. 90th test run at 1000 RPM
91. 91st test run at 1000 RPM
92. 92nd test run at 1000 RPM
93. 93rd test run at 1000 RPM
94. 94th test run at 1000 RPM
95. 95th test run at 1000 RPM
96. 96th test run at 1000 RPM
97. 97th test run at 1000 RPM
98. 98th test run at 1000 RPM
99. 99th test run at 1000 RPM
100. 100th test run at 1000 RPM
101. 101st test run at 1000 RPM
102. 102nd test run at 1000 RPM
103. 103rd test run at 1000 RPM
104. 104th test run at 1000 RPM
105. 105th test run at 1000 RPM
106. 106th test run at 1000 RPM
107. 107th test run at 1000 RPM
108. 108th test run at 1000 RPM
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182. 182nd test run at 1000 RPM
183. 183rd test run at 1000 RPM
184. 184th test run at 1000 RPM
185. 185th test run at 1000 RPM
186. 186th test run at 1000 RPM
 |
|---|

FILE NO. 100-369 OF THE NATIONAL ARCHIVES TRANSMITTAL DATE 11/16/2006

T-234



SHEAR STRENGTH PARAMETERS

$\phi = 6.0^\circ$

$\tan \phi = 0.104$

$c = 2.0$ T. SQ. FT.

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

NORMAL STRESS, T. SQ. FT.

| TEST NO. | | 1 | 2 |
|---|--------------------------------|--------|--------|
| INITIAL | WATER CONTENT | 24.8% | 24.2% |
| | VOID RATIO | 0.726 | 0.706 |
| | SATURATION | 75.1% | 75.1% |
| | DRY DENSITY, LB. CU. FT. | 84.1 | 84.1 |
| | VOID RATIO AFTER CONSOLIDATION | 0.571 | 0.670 |
| TIME FOR 50 PERCENT CONSOLIDATION, MIN. | | 0.7 | 0.6 |
| FINAL | WATER CONTENT | 28.2% | 27.0% |
| | VOID RATIO | 0.380 | 0.501 |
| | SATURATION | 100% | 100% |
| NORMAL STRESS, T. SQ. FT. | | 4.50 | 4.70 |
| MAXIMUM SHEAR STRESS, T. SQ. FT. | | 2.58* | 2.40* |
| ACTUAL TIME TO FAILURE, MIN. | | 60 | 60 |
| RATE OF STRAIN, IN. / MIN. | | 0.0083 | 0.0083 |
| ULTIMATE SHEAR STRESS, T. SQ. FT. | | — | — |

TYPE OF SPECIMEN *FINE SANDY CLAY (CH)*

CLASSIFICATION

LL *57* PL *27* PI *30*

3.0 IN SQUARE 0.500 IN THICK

REMARKS ** Stress @ 0.5" horiz. deformation*

Sample molded @ approx. moisture content of 24.8% (max) and dry density of 84.1 pcf (95% maximum density)

PROJECT *Cooper River Rediversion*

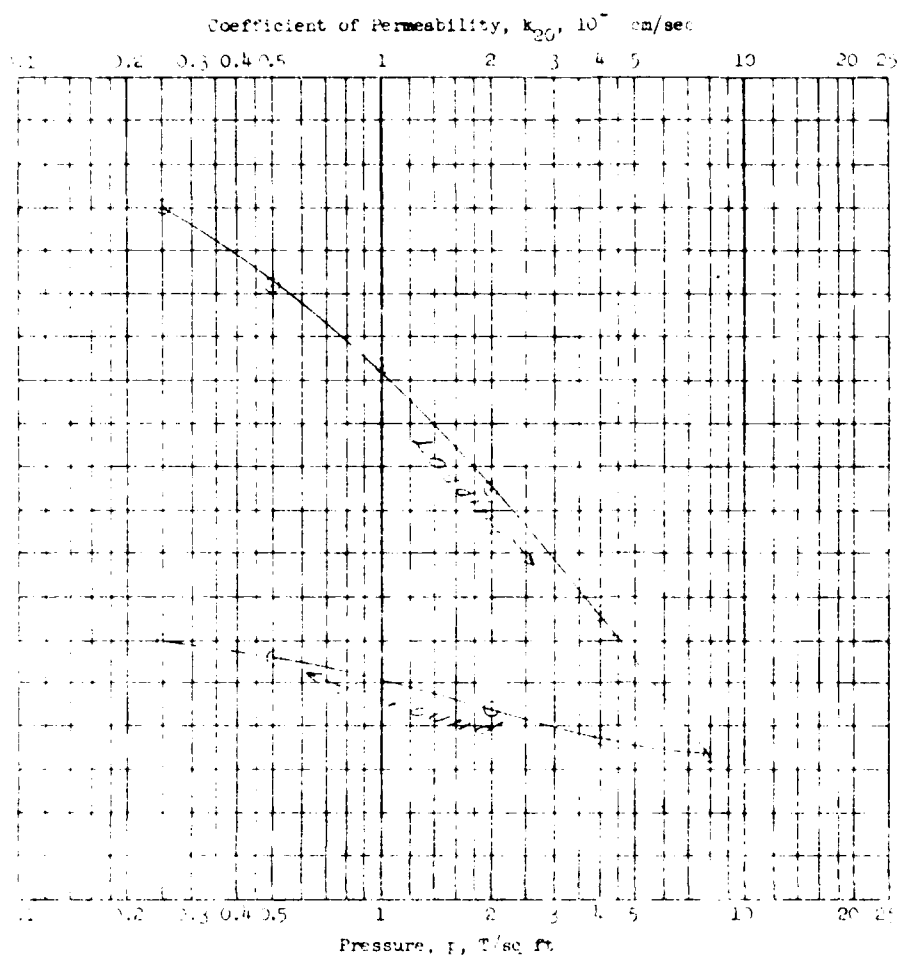
St. Stephens, S. Carolina

AREA *TAILRACE CANAL*

BORING NO. *T-17* SAMPLE NO. *1*

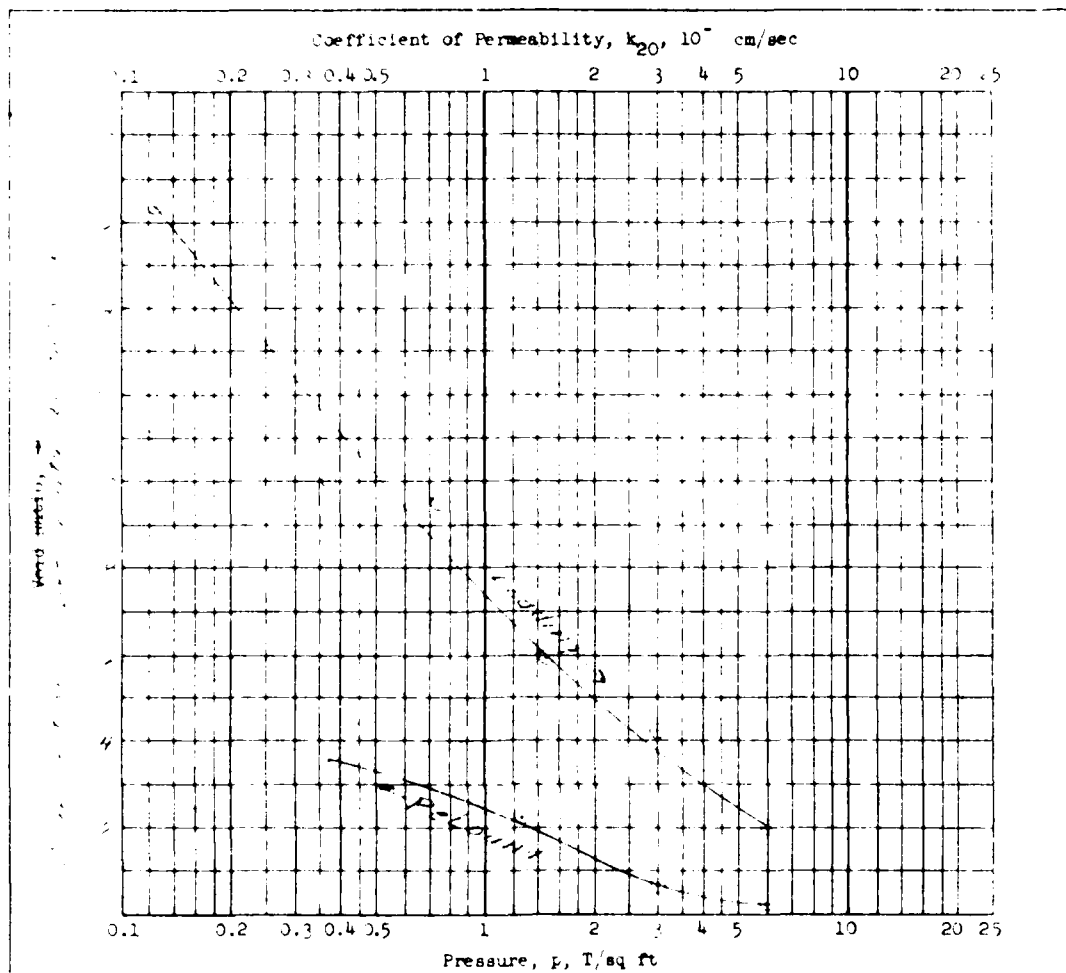
DEPTH *0.0' - 6.0'* DATE *December*

DIRECT SHEAR TEST REPORT



| | | Before Test | | After Test | |
|-----------------------|-------------------------|-------------|--------|------------|--|
| Water Content, w_0 | 23.8 % | w_f | 20.0 % | | |
| Void Ratio, e_0 | 1.92 | e_f | 1.77 | | |
| Saturation, S_0 | 85.0 % | S_f | 100 % | | |
| Fry Density, γ | 127 lb/ft ³ | | | | |
| k_v at e_0 | $\times 10^{-7}$ cm/sec | | | | |
| Project | | Highway 100 | | | |
| Area | | 100 | | | |
| Boring No. | | Sample No. | | 50 | |
| Depth | | 100 | | 100 | |

CONSOLIDATION TEST REPORT



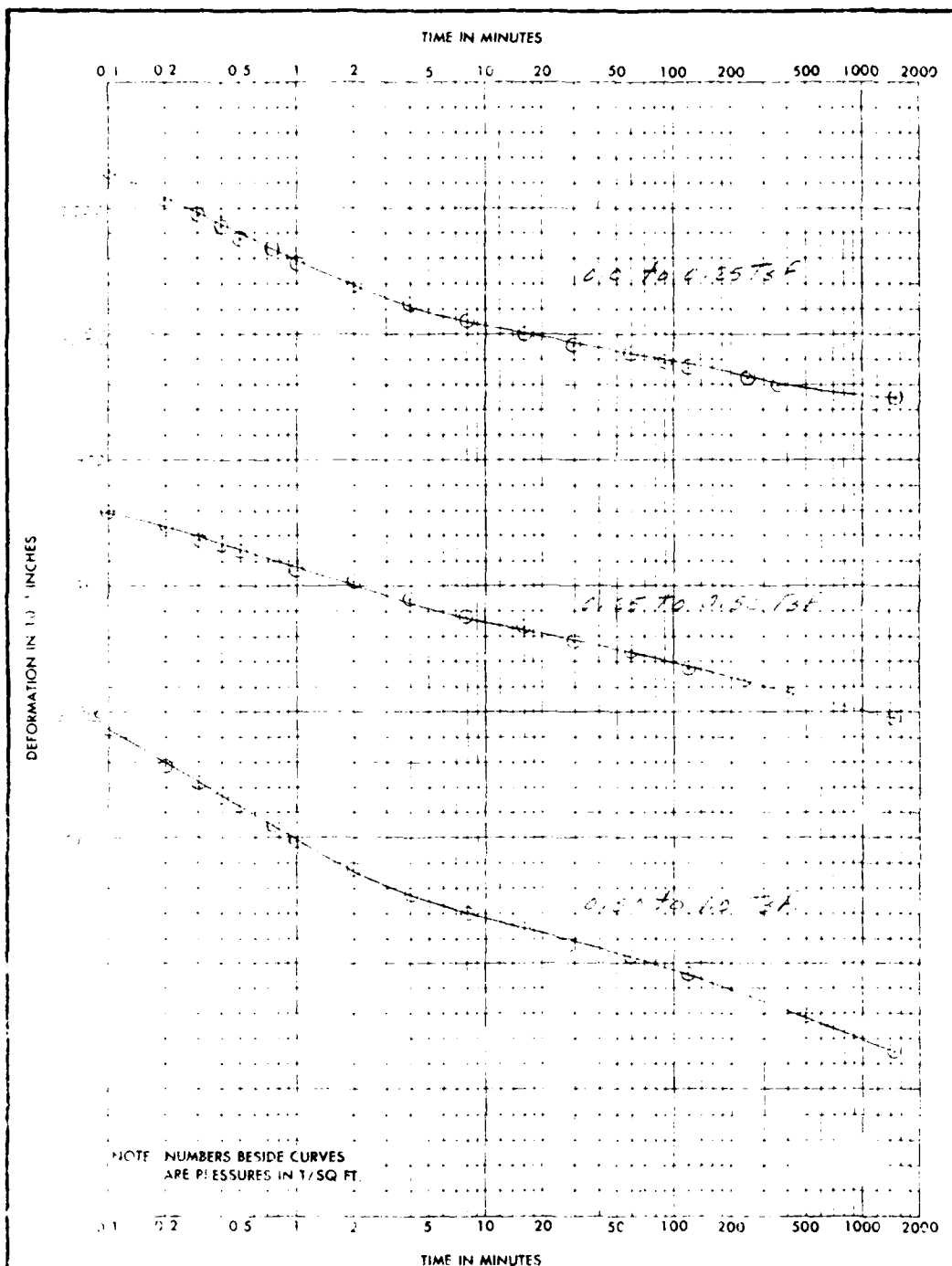
| | | | | | |
|----------------------------|--------------------|-------------------------|-------------------------|------------|--------|
| Type of Specimen | | Before Test | | After Test | |
| Diam. 4 in. | Ht. 1.0 in. | Water Content, w_o | 31.8 % | w_f | 30.0 % |
| Overburden Pressure, p_o | T/sq ft | Void Ratio, e_o | 0.714 | e_f | 0.714 |
| Preconsol. Pressure, p_c | T/sq ft | Saturation, S_o | 100 % | S_f | 100 % |
| Compression Index, C_c | 0.06 | Dry Density, γ_d | 94.1 lb/ft ³ | | |
| Classification | CL - 27 | k_{20} at $e_o =$ | $\times 10^{-7}$ cm/sec | | |
| LL | 27 | Project | Comp. No. 10-10-10 | | |
| PL | 27 | Area | THREE C. CHINA | | |
| Remarks | Comp. No. 10-10-10 | Boring No. | TH-17 | | |
| | | Depth | Sample No. | | |
| | | El. | Date | | |

CONSOLIDATION TEST REPORT

ENG. FORM 2090

USE PREVIOUS EDITIONS ARE OBSOLETE

7-239
T-235



PROJECT: *San Francisco Bay Bridge, S.F. Bay*

AREA: *San Francisco Bay Bridge*

BORING NO: *10-17* SAMPLE NO: *CS #2* DEPTH: *0.0' to 0.1'* DATE: *January 1970*

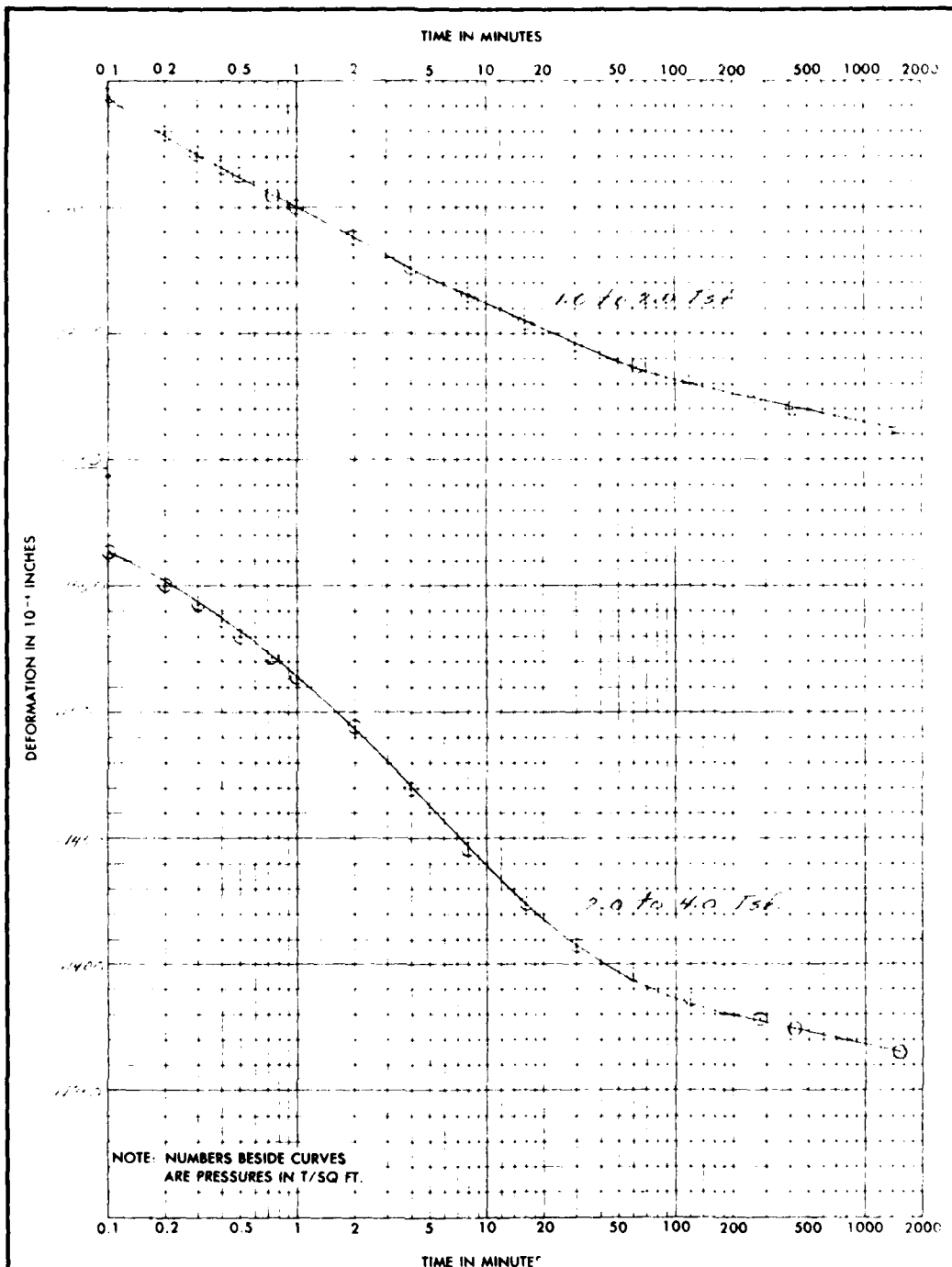
ENG FORM 2088 PREVIOUS EDITIONS ARE OBSOLETE

CONSOLIDATION TEST—TIME CURVES (TRANSLUCENT)

W_u = 74% (A.M.C. + 2%)
P_u = 24.0 TSF (75% density)

Sheet 3 of 6

T-240
T-236

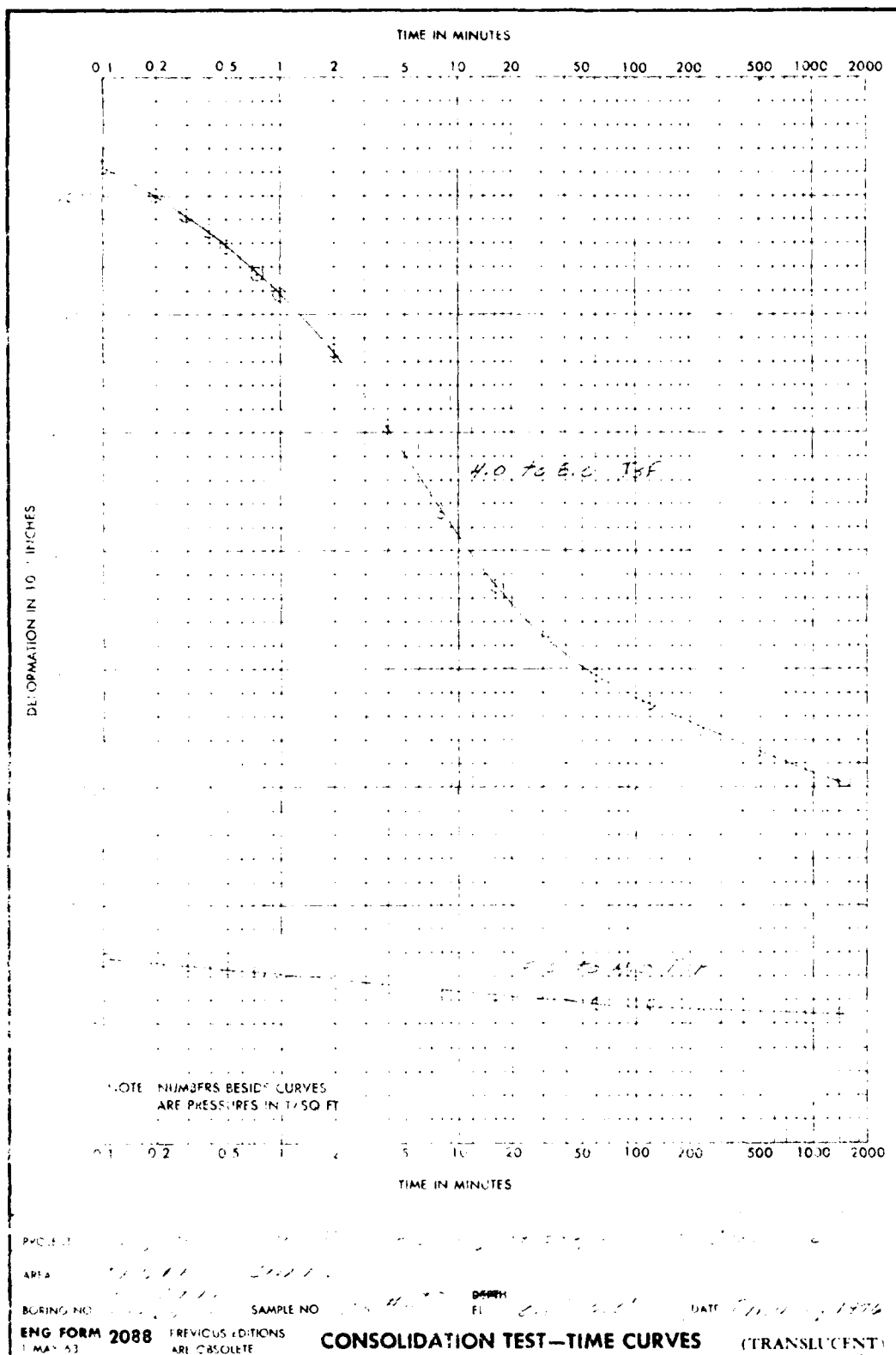


PROJECT *Cooper River Reimersion, St. Stephen, S. Carolina*
 AREA *TRILACT CANAL*
 BORING NO. *T-11 & T-17* SAMPLE NO. *CS #2* ** DEPTH *0.0' - 6.0'* DATE *January 1972*
 ENG FORM 2088 PREVIOUS EDITIONS ARE OBSOLETE **CONSOLIDATION TEST—TIME CURVES** (TRANSLUCENT)

** *Revised*
W_u = 37.8% (0.110.12%)
V_u = 84.0 HF (95% density)

Sheet 4 of 6

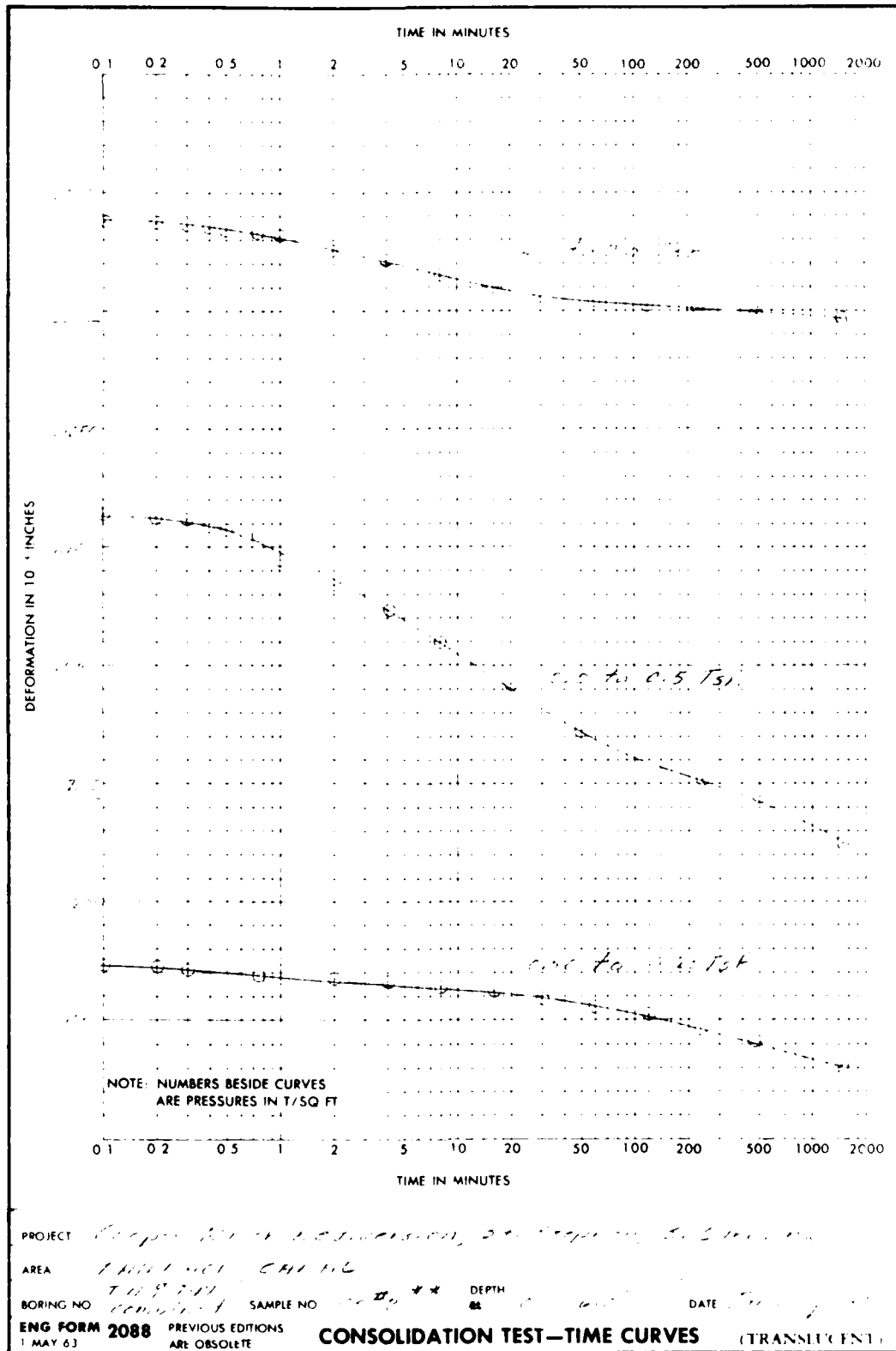
T-29
 T-28



224 (0.42 x 2%)
140 ft (0.42 x 140 ft density)

Sheet 5 of 5

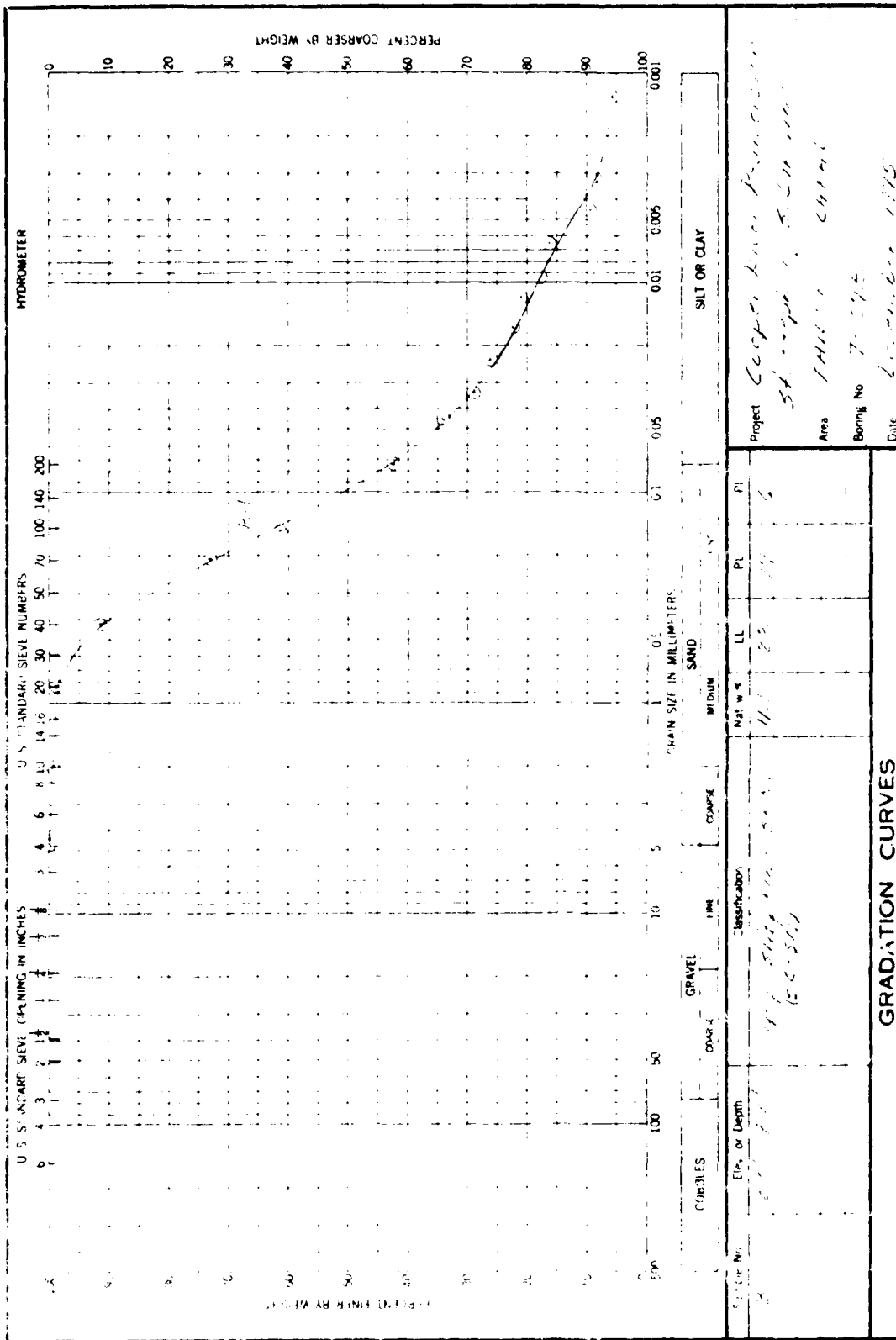
T-242
T-238



* * * *Revised*
1.5 = 22.5 T (1000 x 2.25)
0.5 = 22.5 T (1000 x 0.5)

Sheet 6 of 6

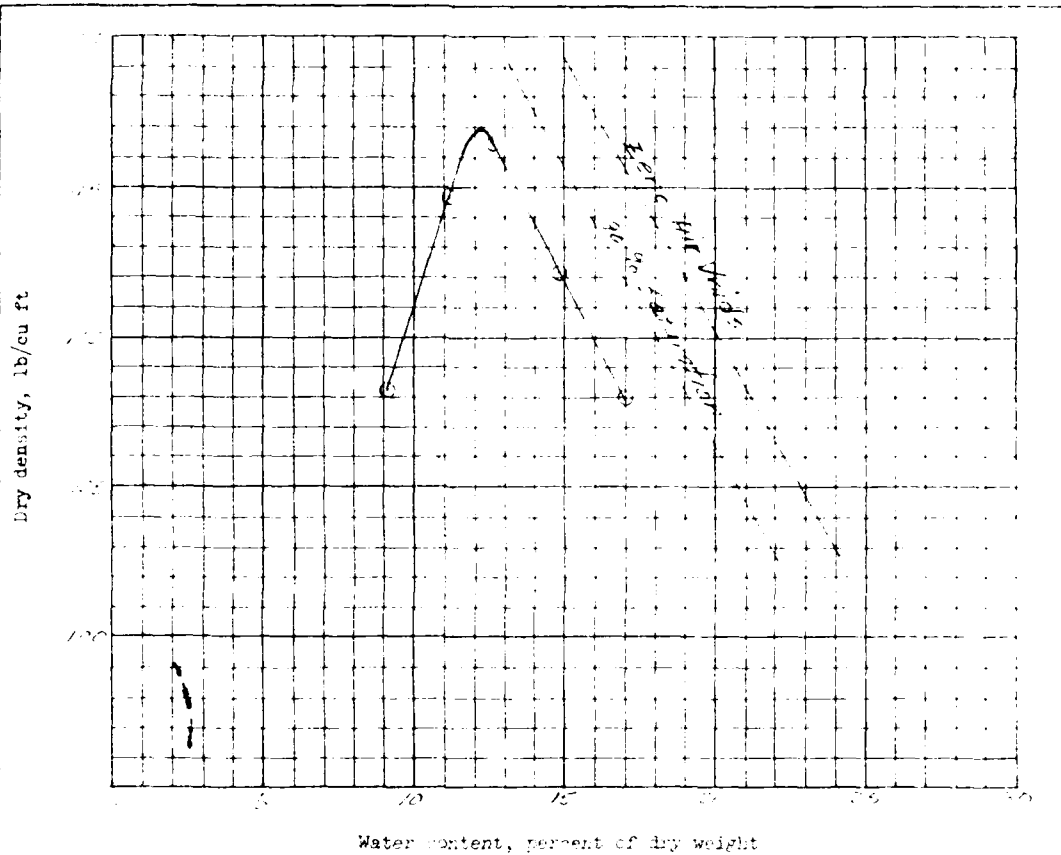
T-243
 T-243



ENG 2087

T-244

1241



Standard Proctor compaction test
 25 blows per each of 2 layers, with 5.5 lb rammer and
 1/4 inch drop. 4 inch diameter mold

| Sample No. | Elev or Depth | Classification | G | LL | PL | % > No. 4 | % < 5/4 in. |
|------------|---------------|--------------------------------|-----|----|----|-----------|-------------|
| 1 | 0.0-1.0 | CLAY, L. SILTY FINE SAND (SCL) | 100 | 17 | 17 | 100 | 100 |

| | |
|--------------------------------|------|
| Sample No. | 1 |
| Natural water content, percent | 12.0 |
| Optimum water content, percent | 12.0 |
| Max dry density, lb/cu ft | 125 |

Remarks

Project: STATION 10+00 TO 10+100

Area: THIRD LANE

Boring No. 1 Date 6/1/65

COMPACTION TEST REPORT

Failure Sketches

Compressive Stress, T/sq ft

05101520

Axial Strain, %

☐ Controlled stress
☐ Controlled strain

| | | | | | | | |
|------------------------------|----------------|--|--|--|--|--|--|
| Test No. | | | | | | | |
| Specimen | | | | | | | |
| Wt. (lb) | W ₀ | | | | | | |
| Length (in) | L ₀ | | | | | | |
| Initial diameter (in) | D ₀ | | | | | | |
| Initial specimen height (in) | H ₀ | | | | | | |
| Initial specimen weight (lb) | | | | | | | |
| Final diameter (in) | D _f | | | | | | |
| Final specimen height (in) | H _f | | | | | | |
| Final specimen weight (lb) | | | | | | | |
| Final diameter (in) | | | | | | | |
| Final specimen height (in) | | | | | | | |
| Final specimen weight (lb) | | | | | | | |
| Final diameter (in) | | | | | | | |
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| Final specimen height (in) | | | | | | | |
| Final specimen weight (lb) | | | | | | | |
| Final diameter (in) | | | | | | | |
| Final specimen height (in) | | | | | | | |
| Final specimen weight (lb) | | | | | | | |
| Final diameter (in) | | | | | | | |

UNRESTRICTED CONFERENCE TEST REPORT

4 2 3 4 5 5

PLATE X

PLATE X
T-246 242

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|---------------------|--|-----------------------|----------------------------------|-----------------------|------------------------|------------|-----------------------|-----------------------------|------------------------|------------------|-------|-------|---------------|------------|------|------|------------|-------------|-------|-------|--------------|------------------|-------|--|--|------------------------|---------------|--|--|---------------|-------|--|--|------------|-------|--|--|--|------------------------------|-------|--|--|--|---------------------------------|------------|-----|------|------|--|----------------------------------|---------------------------|------|------|------|--|---|-------|---|----|----|--|-----------------------------------|-------------------------------|-------|-------|------|--|----------------------|-------|------|------|------|--|--------------------|-------|------|------|------|
| <p style="text-align: center;">T-247 T-27</p> <p style="text-align: center;">30° DEG</p> <p style="text-align: center;">TAN ϕ 16</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p style="text-align: center;">DEVIATOR STRESS, $\sigma_1 - \sigma_3$, T SQ FT</p> <p style="text-align: center;">AXIAL STRAIN, %</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">SPECIMEN NO.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td rowspan="4">INITIAL</td> <td>WATER CONTENT, %</td> <td>w_0 13.1</td> <td>12.1</td> <td>12.2</td> </tr> <tr> <td>DRY DENSITY, LB/ CU FT</td> <td>γ_d 111.7</td> <td>112.1</td> <td>112.2</td> </tr> <tr> <td>SATURATION, %</td> <td>s_0 64.6</td> <td>65.1</td> <td>64.7</td> </tr> <tr> <td>VOID RATIO</td> <td>e_0 0.403</td> <td>0.417</td> <td>0.406</td> </tr> <tr> <td rowspan="4">BEFORE SHEAR</td> <td>WATER CONTENT, %</td> <td>w_c</td> <td></td> <td></td> </tr> <tr> <td>DRY DENSITY, LB/ CU FT</td> <td>γ_{dc}</td> <td></td> <td></td> </tr> <tr> <td>SATURATION, %</td> <td>s_c</td> <td></td> <td></td> </tr> <tr> <td>VOID RATIO</td> <td>e_c</td> <td></td> <td></td> </tr> <tr> <td></td> <td>FINAL BACK PRESSURE, T SQ FT</td> <td>u_0</td> <td></td> <td></td> </tr> <tr> <td></td> <td>MINOR PRINCIPAL STRESS, T SQ FT</td> <td>σ_3</td> <td>0.0</td> <td>0.16</td> <td>0.20</td> </tr> <tr> <td></td> <td>MAXIMUM DEVIATOR STRESS, T SQ FT</td> <td>$\sigma_1 - \sigma_3$ MAX</td> <td>3.13</td> <td>3.50</td> <td>3.50</td> </tr> <tr> <td></td> <td>TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN</td> <td>$t_1$</td> <td>6</td> <td>15</td> <td>14</td> </tr> <tr> <td></td> <td>ULTIMATE DEVIATOR STRESS, T SQ FT</td> <td>$(\sigma_1 - \sigma_3)_{ULT}$</td> <td>3.87*</td> <td>4.02*</td> <td>4.03</td> </tr> <tr> <td></td> <td>INITIAL DIAMETER, IN</td> <td>D_0</td> <td>1.40</td> <td>1.42</td> <td>1.42</td> </tr> <tr> <td></td> <td>INITIAL HEIGHT, IN</td> <td>H_0</td> <td>3.15</td> <td>3.10</td> <td>3.15</td> </tr> </table> | SPECIMEN NO. | | 1 | 2 | 3 | INITIAL | WATER CONTENT, % | w_0 13.1 | 12.1 | 12.2 | DRY DENSITY, LB/ CU FT | γ_d 111.7 | 112.1 | 112.2 | SATURATION, % | s_0 64.6 | 65.1 | 64.7 | VOID RATIO | e_0 0.403 | 0.417 | 0.406 | BEFORE SHEAR | WATER CONTENT, % | w_c | | | DRY DENSITY, LB/ CU FT | γ_{dc} | | | SATURATION, % | s_c | | | VOID RATIO | e_c | | | | FINAL BACK PRESSURE, T SQ FT | u_0 | | | | MINOR PRINCIPAL STRESS, T SQ FT | σ_3 | 0.0 | 0.16 | 0.20 | | MAXIMUM DEVIATOR STRESS, T SQ FT | $\sigma_1 - \sigma_3$ MAX | 3.13 | 3.50 | 3.50 | | TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN | t_1 | 6 | 15 | 14 | | ULTIMATE DEVIATOR STRESS, T SQ FT | $(\sigma_1 - \sigma_3)_{ULT}$ | 3.87* | 4.02* | 4.03 | | INITIAL DIAMETER, IN | D_0 | 1.40 | 1.42 | 1.42 | | INITIAL HEIGHT, IN | H_0 | 3.15 | 3.10 | 3.15 |
| SPECIMEN NO. | | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INITIAL | WATER CONTENT, % | w_0 13.1 | 12.1 | 12.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DRY DENSITY, LB/ CU FT | γ_d 111.7 | 112.1 | 112.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SATURATION, % | s_0 64.6 | 65.1 | 64.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | VOID RATIO | e_0 0.403 | 0.417 | 0.406 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BEFORE SHEAR | WATER CONTENT, % | w_c | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DRY DENSITY, LB/ CU FT | γ_{dc} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SATURATION, % | s_c | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | VOID RATIO | e_c | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | FINAL BACK PRESSURE, T SQ FT | u_0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MINOR PRINCIPAL STRESS, T SQ FT | σ_3 | 0.0 | 0.16 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MAXIMUM DEVIATOR STRESS, T SQ FT | $\sigma_1 - \sigma_3$ MAX | 3.13 | 3.50 | 3.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN | t_1 | 6 | 15 | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ULTIMATE DEVIATOR STRESS, T SQ FT | $(\sigma_1 - \sigma_3)_{ULT}$ | 3.87* | 4.02* | 4.03 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | INITIAL DIAMETER, IN | D_0 | 1.40 | 1.42 | 1.42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | INITIAL HEIGHT, IN | H_0 | 3.15 | 3.10 | 3.15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>CONTROLLED: <i>strain</i> TEST</p> <p>DESCRIPTION OF SPECIMENS: <i>clayey silty fine sand (SC-21)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>LL 25</td> <td>PL 17</td> <td>PI 6</td> <td>G_s 2.65</td> <td>TYPE OF SPECIMEN <i>Remolded</i></td> <td>TYPE OF TEST <i>u</i></td> </tr> </table> | | LL 25 | PL 17 | PI 6 | G _s 2.65 | TYPE OF SPECIMEN <i>Remolded</i> | TYPE OF TEST <i>u</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LL 25 | PL 17 | PI 6 | G _s 2.65 | TYPE OF SPECIMEN <i>Remolded</i> | TYPE OF TEST <i>u</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>REMARKS: * <i>Strain 3.15% axial strain</i></p> <p><i>Sample used in 2 approx. 1/2 inch segments of 1.5 to 2.0 inches and dry density of 112.2 pcf. (95% max density)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">PROJECT <i>TAILWATER CANAL, SOUTH KIRK</i></td> </tr> <tr> <td colspan="2">LOCATION <i>Kodivision, St. Stephen, S. Carolina</i></td> </tr> <tr> <td>PORING NO. <i>T-27</i></td> <td>SAMPLE NO. <i>P-1</i></td> </tr> <tr> <td colspan="2">DEPTH <i>0.0 - 1.0</i></td> </tr> <tr> <td>LABORATORY <i>NED</i></td> <td>DATE <i>December 1, '65</i></td> </tr> </table> | | PROJECT <i>TAILWATER CANAL, SOUTH KIRK</i> | | LOCATION <i>Kodivision, St. Stephen, S. Carolina</i> | | PORING NO. <i>T-27</i> | SAMPLE NO. <i>P-1</i> | DEPTH <i>0.0 - 1.0</i> | | LABORATORY <i>NED</i> | DATE <i>December 1, '65</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT <i>TAILWATER CANAL, SOUTH KIRK</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LOCATION <i>Kodivision, St. Stephen, S. Carolina</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PORING NO. <i>T-27</i> | SAMPLE NO. <i>P-1</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DEPTH <i>0.0 - 1.0</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LABORATORY <i>NED</i> | DATE <i>December 1, '65</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ENG FORM NO 2089
REV JUNE 1970

PREVIOUS EDITION IS OBSOLETE

TRANSLUCENT

(EM 1110-2-1906)

T-247

T-247

| | |
|---|--|
| <p style="text-align: center;">T. SF</p> <p style="text-align: center;">φ 21.47 DEG</p> <p style="text-align: center;">TAN φ 0.40</p> | |
|---|--|

| | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">SPECIMEN NO.</th> <th>1</th> <th>2</th> <th>3</th> </tr> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">INITIAL</td> <td>WATER CONTENT, %</td> <td>W₀</td> <td>10.2</td> <td>10.2</td> <td>10.2</td> </tr> <tr> <td>DRY DENSITY, LB. CU. FT.</td> <td>γ_{d0}</td> <td>114.6</td> <td>114.4</td> <td>114.4</td> </tr> <tr> <td>SATURATION, %</td> <td>S₀</td> <td>88.1</td> <td>88.1</td> <td>88.1</td> </tr> <tr> <td>VOID RATIO</td> <td>e₀</td> <td>0.504</td> <td>0.504</td> <td>0.504</td> </tr> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">BEFORE SHEAR</td> <td>WATER CONTENT, %</td> <td>W_c</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DRY DENSITY, LB. CU. FT.</td> <td>γ_{dc}</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SATURATION, %</td> <td>S_c</td> <td></td> <td></td> <td></td> </tr> <tr> <td>VOID RATIO</td> <td>e_c</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>FINAL BACK PRESSURE, T. SQ. FT.</td> <td>u₀</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>MINOR PRINCIPAL STRESS, T. SQ. FT.</td> <td>σ₃</td> <td>1.2</td> <td>1.2</td> <td>1.2</td> </tr> <tr> <td></td> <td>MAXIMUM DEVIATOR STRESS, T. SQ. FT.</td> <td>σ₁ - σ₃ MAX</td> <td>4.2</td> <td>4.4</td> <td>4.4</td> </tr> <tr> <td></td> <td>TIME TO σ₁ - σ₃ MAX, MIN</td> <td>t₁</td> <td>4</td> <td>6</td> <td>7</td> </tr> <tr> <td></td> <td>ULTIMATE DEVIATOR STRESS, T. SQ. FT.</td> <td>σ₁ - σ₃ ULT</td> <td>5.2</td> <td>4.8</td> <td>4.8</td> </tr> <tr> <td></td> <td>INITIAL DIAMETER, IN.</td> <td>D₀</td> <td>1.41</td> <td>1.42</td> <td>1.41</td> </tr> <tr> <td></td> <td>INITIAL HEIGHT, IN.</td> <td>H₀</td> <td>3.12</td> <td>3.12</td> <td>3.12</td> </tr> </table> | SPECIMEN NO. | | 1 | 2 | 3 | INITIAL | WATER CONTENT, % | W ₀ | 10.2 | 10.2 | 10.2 | DRY DENSITY, LB. CU. FT. | γ _{d0} | 114.6 | 114.4 | 114.4 | SATURATION, % | S ₀ | 88.1 | 88.1 | 88.1 | VOID RATIO | e ₀ | 0.504 | 0.504 | 0.504 | BEFORE SHEAR | WATER CONTENT, % | W _c | | | | DRY DENSITY, LB. CU. FT. | γ _{dc} | | | | SATURATION, % | S _c | | | | VOID RATIO | e _c | | | | | FINAL BACK PRESSURE, T. SQ. FT. | u ₀ | | | | | MINOR PRINCIPAL STRESS, T. SQ. FT. | σ ₃ | 1.2 | 1.2 | 1.2 | | MAXIMUM DEVIATOR STRESS, T. SQ. FT. | σ ₁ - σ ₃ MAX | 4.2 | 4.4 | 4.4 | | TIME TO σ ₁ - σ ₃ MAX, MIN | t ₁ | 4 | 6 | 7 | | ULTIMATE DEVIATOR STRESS, T. SQ. FT. | σ ₁ - σ ₃ ULT | 5.2 | 4.8 | 4.8 | | INITIAL DIAMETER, IN. | D ₀ | 1.41 | 1.42 | 1.41 | | INITIAL HEIGHT, IN. | H ₀ | 3.12 | 3.12 | 3.12 |
|--------------|--|-------------------------------------|-------|-------|-------|---|---------|------------------|----------------|------|------|------|--------------------------|-----------------|-------|-------|-------|---------------|----------------|------|------|------|------------|----------------|-------|-------|-------|--------------|------------------|----------------|--|--|--|--------------------------|-----------------|--|--|--|---------------|----------------|--|--|--|------------|----------------|--|--|--|--|---------------------------------|----------------|--|--|--|--|------------------------------------|----------------|-----|-----|-----|--|-------------------------------------|-------------------------------------|-----|-----|-----|--|--|----------------|---|---|---|--|--------------------------------------|-------------------------------------|-----|-----|-----|--|-----------------------|----------------|------|------|------|--|---------------------|----------------|------|------|------|
| SPECIMEN NO. | | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INITIAL | WATER CONTENT, % | W ₀ | 10.2 | 10.2 | 10.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DRY DENSITY, LB. CU. FT. | γ _{d0} | 114.6 | 114.4 | 114.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SATURATION, % | S ₀ | 88.1 | 88.1 | 88.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | VOID RATIO | e ₀ | 0.504 | 0.504 | 0.504 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BEFORE SHEAR | WATER CONTENT, % | W _c | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DRY DENSITY, LB. CU. FT. | γ _{dc} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SATURATION, % | S _c | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | VOID RATIO | e _c | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | FINAL BACK PRESSURE, T. SQ. FT. | u ₀ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MINOR PRINCIPAL STRESS, T. SQ. FT. | σ ₃ | 1.2 | 1.2 | 1.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MAXIMUM DEVIATOR STRESS, T. SQ. FT. | σ ₁ - σ ₃ MAX | 4.2 | 4.4 | 4.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | TIME TO σ ₁ - σ ₃ MAX, MIN | t ₁ | 4 | 6 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ULTIMATE DEVIATOR STRESS, T. SQ. FT. | σ ₁ - σ ₃ ULT | 5.2 | 4.8 | 4.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | INITIAL DIAMETER, IN. | D ₀ | 1.41 | 1.42 | 1.41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | INITIAL HEIGHT, IN. | H ₀ | 3.12 | 3.12 | 3.12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TEST

3 1/2 x 1/2 SILTY FINE SAND (SC-SM)

| | |
|---|--|
| <p>REMARKS: <i>2.1% moisture content of 10.2% water content, 2.1% and 1.4% density of 114.6 lb/cu ft.</i></p> | <p>TYPE OF SPECIMEN <i>Remolded</i></p> <p>PROJECT <i>THILLAGE SAND, LOCK 1</i></p> <p>BORING NO. <i>T-27</i> SAMPLE NO. <i>3-1</i></p> <p>DEPTH <i>6.0-9.0'</i></p> <p>LABORATORY <i>NED</i> DATE <i>6-1-61</i></p> |
|---|--|

TRIAXIAL COMPRESSION TEST REPORT

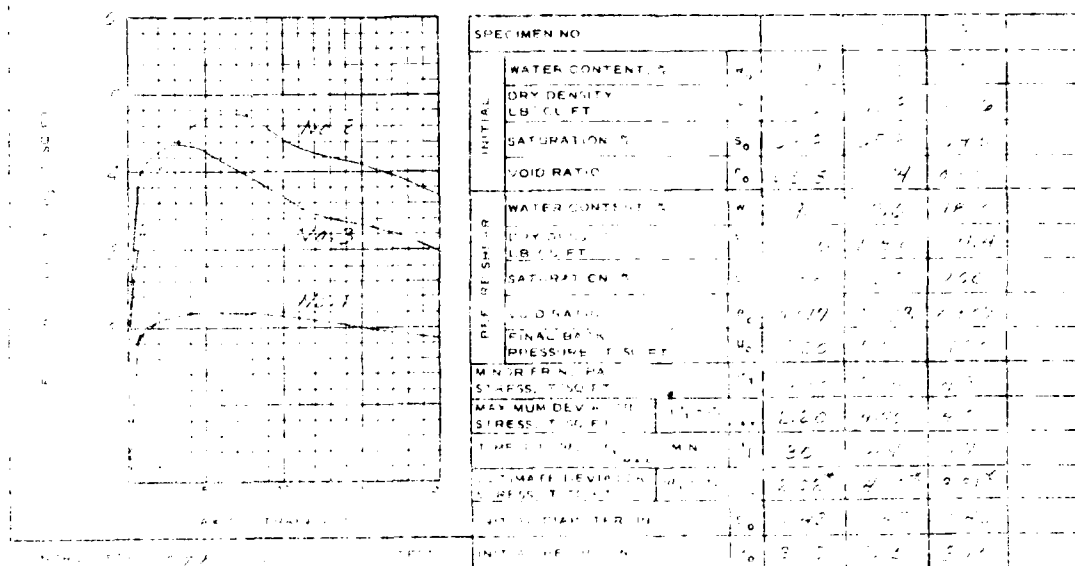
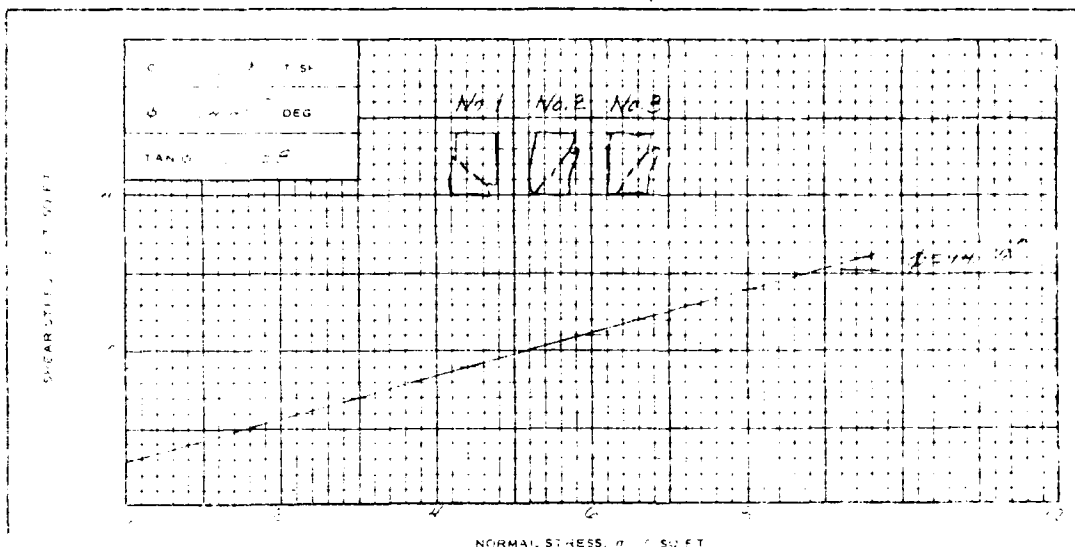
FORM NO. 2089
MAY 1961

PREVIOUS EDITION IS OBSOLETE

TRANSLUCENT

(EM 1110-2-1906)

T-249



REMARKS: *Specimens 1, 2, and 3 were tested under identical conditions. The results show that the specimens are of similar quality and that the test results are consistent.*

TYPE OF TEST: *Triaxial Compression*

DATE: *December 1, 1966*

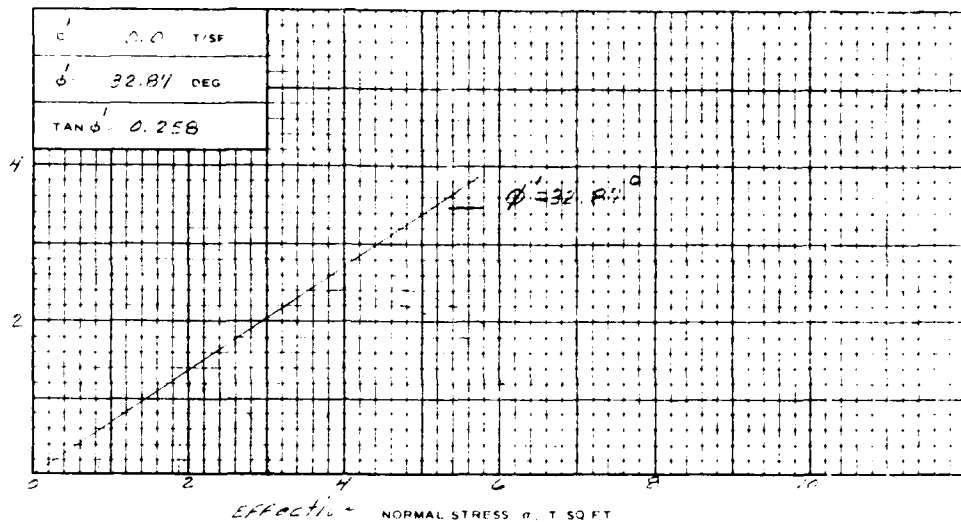
TESTER: *J. M. 1110-1*

AXIAL COMPRESSION TEST REPORT

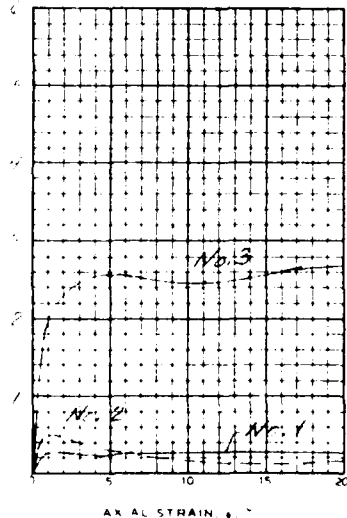
T-250
T-246

SHEET 2 OF 2

SHEAR STRESS, T, SQ. FT.



NORMAL STRESS, sigma, T, SQ. FT.



| SPECIMEN NO. | | 1 | 2 | 3 |
|--|--------------------------|--------------------------------|-------|-------|
| INITIAL | WATER CONTENT, % | w_0 | 12.0 | 12.0 |
| | DRY DENSITY, LB./CU. FT. | ρ_d | 111.6 | 111.6 |
| | SATURATION, % | s_0 | | |
| | VOID RATIO | e_0 | | |
| BEFORE SHEAR | WATER CONTENT, % | w_c | | |
| | DRY DENSITY, LB./CU. FT. | ρ_d | | |
| | SATURATION, % | s_c | | |
| | VOID RATIO | e_c | | |
| FINAL BACK PRESSURE, T, SQ. FT. | | u_0 | | |
| MINOR PRINCIPAL STRESS, T, SQ. FT. | | σ_3 | 0.84 | 1.96 |
| MAXIMUM DEVIATOR STRESS, T, SQ. FT. | | $\sigma_1 - \sigma_3$ | | |
| TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN. | | t_f | | |
| ULTIMATE DEVIATOR STRESS, T, SQ. FT. | | $(\sigma_1 - \sigma_3)_{ULT.}$ | | |
| MAJOR PRIN. STRESS, T, SQ. FT. | | σ_1 | 3.64 | 6.91 |
| INITIAL DIAMETER, IN. | | d_0 | | |
| INITIAL HEIGHT, IN. | | h_0 | 40.24 | 40.20 |

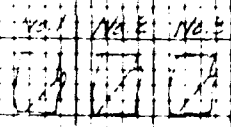
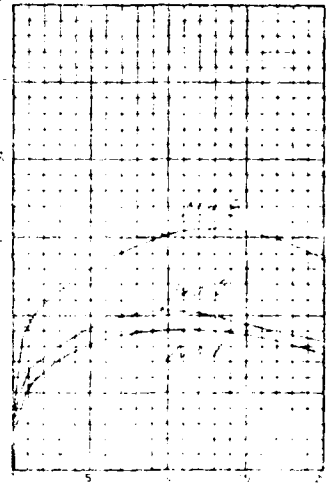
TEST: *Static*

TESTING SPECIMENS: *clay (silty fine sand (SC-SM))*

| | | | | |
|--|-------|---------|--|------------------------|
| PR. 14 | PR. 6 | G: 2.69 | TYPE OF SPECIMEN: <i>Remolded</i> | TYPE OF TEST: <i>1</i> |
| REMARKS: <i>Failure in compression</i> | | | PROJECT: <i>THILRHCE CANAL, Cooper River</i> | |
| STRESS: <i>Major and Minor Principal</i> | | | REVISION: <i>St. Stephens, S. 500-112</i> | |
| BORING NO.: <i>T-27</i> | | | SAMPLE NO.: <i>8-1</i> | |
| DEPTH: <i>0.6' - 7.0'</i> | | | LABORATORY: <i>NEU</i> | |
| DATE: <i>December 1975</i> | | | DATE: <i>December 1975</i> | |

TRIAXIAL COMPRESSION TEST REPORT

T-251
T-257

| TEST NO.
DATE
LOCATION | Y&E NO. 3
 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--------------|-------|---|---|-----------------|------|------|------|-------------------------|-------|-------|-------|--------------|-----|-----|-----|------------|------|------|------|-----------------|------|------|------|-------------------------|-------|-------|-------|--------------|-----|-----|-----|------------|------|------|------|------------------------------|-------|-------|-------|--------------------------------------|-------|-------|-------|----------------------|-------|-------|-------|----------------|-------|-------|-------|--------------------|-------|-------|-------|
| NORMAL STRESS - T. SQ. FT. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">SPECIMEN NO.</th> <th style="width: 10%;">1</th> <th style="width: 10%;">2</th> <th style="width: 10%;">3</th> </tr> <tr> <td>WATER CONTENT %</td> <td>11.5</td> <td>11.2</td> <td>11.2</td> </tr> <tr> <td>DRY DENSITY LB. CU. FT.</td> <td>111.5</td> <td>111.2</td> <td>111.2</td> </tr> <tr> <td>SATURATION %</td> <td>100</td> <td>100</td> <td>100</td> </tr> <tr> <td>VOID RATIO</td> <td>0.75</td> <td>0.75</td> <td>0.75</td> </tr> <tr> <td>WATER CONTENT %</td> <td>11.5</td> <td>11.2</td> <td>11.2</td> </tr> <tr> <td>DRY DENSITY LB. CU. FT.</td> <td>111.5</td> <td>111.2</td> <td>111.2</td> </tr> <tr> <td>SATURATION %</td> <td>100</td> <td>100</td> <td>100</td> </tr> <tr> <td>VOID RATIO</td> <td>0.75</td> <td>0.75</td> <td>0.75</td> </tr> <tr> <td>UNIAxIAL STRESS - T. SQ. FT.</td> <td>111.5</td> <td>111.2</td> <td>111.2</td> </tr> <tr> <td>MAXIMUM DEVIATOR STRESS - T. SQ. FT.</td> <td>111.5</td> <td>111.2</td> <td>111.2</td> </tr> <tr> <td>TIME TO FAILURE MIN.</td> <td>111.5</td> <td>111.2</td> <td>111.2</td> </tr> <tr> <td>UNIFORM STRAIN</td> <td>111.5</td> <td>111.2</td> <td>111.2</td> </tr> <tr> <td>INITIAL HEIGHT IN.</td> <td>111.5</td> <td>111.2</td> <td>111.2</td> </tr> </table> | SPECIMEN NO. | 1 | 2 | 3 | WATER CONTENT % | 11.5 | 11.2 | 11.2 | DRY DENSITY LB. CU. FT. | 111.5 | 111.2 | 111.2 | SATURATION % | 100 | 100 | 100 | VOID RATIO | 0.75 | 0.75 | 0.75 | WATER CONTENT % | 11.5 | 11.2 | 11.2 | DRY DENSITY LB. CU. FT. | 111.5 | 111.2 | 111.2 | SATURATION % | 100 | 100 | 100 | VOID RATIO | 0.75 | 0.75 | 0.75 | UNIAxIAL STRESS - T. SQ. FT. | 111.5 | 111.2 | 111.2 | MAXIMUM DEVIATOR STRESS - T. SQ. FT. | 111.5 | 111.2 | 111.2 | TIME TO FAILURE MIN. | 111.5 | 111.2 | 111.2 | UNIFORM STRAIN | 111.5 | 111.2 | 111.2 | INITIAL HEIGHT IN. | 111.5 | 111.2 | 111.2 |
| SPECIMEN NO. | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WATER CONTENT % | 11.5 | 11.2 | 11.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DRY DENSITY LB. CU. FT. | 111.5 | 111.2 | 111.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SATURATION % | 100 | 100 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VOID RATIO | 0.75 | 0.75 | 0.75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WATER CONTENT % | 11.5 | 11.2 | 11.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DRY DENSITY LB. CU. FT. | 111.5 | 111.2 | 111.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SATURATION % | 100 | 100 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VOID RATIO | 0.75 | 0.75 | 0.75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UNIAxIAL STRESS - T. SQ. FT. | 111.5 | 111.2 | 111.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MAXIMUM DEVIATOR STRESS - T. SQ. FT. | 111.5 | 111.2 | 111.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TIME TO FAILURE MIN. | 111.5 | 111.2 | 111.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UNIFORM STRAIN | 111.5 | 111.2 | 111.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INITIAL HEIGHT IN. | 111.5 | 111.2 | 111.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REMARKS: <i>Specimens 1, 2, & 3 were tested at the same time. The results are very similar.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT: <i>Translucent</i> TYPE OF SPECIMEN: <i>Round</i> TYPE OF TEST: <i>Triaxial</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BEARING NO.: <i>T-252</i> SAMPLE NO.: <i>1</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LABORATORY: <i>VEL</i> DATE: <i>11/10/61</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TRIAXIAL COMPRESSION TEST REPORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ENG. FORM NO. 1019 JUNE 1956 (REVISED EDITION) (FORVOLUME)

TRANSLUCENT

(EM 1110-2-1906)

T-252

| SPECIMEN NO. | | 1 | 2 | 3 | |
|---|----------------------|---|--------|--------|--------|
| INITIAL | WATER CONTENT, % | W ₀ 14.1 | 13.9 | 14.2 | |
| | DRY DENSITY LB CU FT | γ _{d0} 11.2 | 11.8 | 11.6 | |
| | SATURATION, % | S ₀ | | | |
| | VOID RATIO | e ₀ | | | |
| BEFORE SHEAR | WATER CONTENT, % | W _c | | | |
| | DRY DENSITY LB CU FT | γ _{dc} | | | |
| | SATURATION, % | S _c | | | |
| | VOID RATIO | e _c | | | |
| FINAL BACK PRESSURE, T/SQ FT | | U ₀ | | | |
| MINOR PRINCIPAL STRESS, T/SQ FT | | σ ₃ | 1.46 | 1.67 | 3.34 |
| MAXIMUM DEVIATOR STRESS, T/SQ FT | | (σ ₁ - σ ₃) _{MAX} | | | |
| TIME TO (σ ₁ - σ ₃) _{MAX} , MIN | | t _f | | | |
| ULTIMATE DEVIATOR STRESS, T/SQ FT | | (σ ₁ - σ ₃) _{ULT} | | | |
| MAJOR PRINCIPAL STRESS, T/SQ FT | | σ ₁ | 5.10 | 5.89 | 8.56 |
| MINOR PRINCIPAL STRESS, T/SQ FT | | σ ₃ | -0.38* | +0.47* | +1.78* |

| CONTROLLED- | | TEST | |
|-------------|--|------|--|
| strain | | | |

DESCRIPTION OF SPECIMENS *clayey-silty fine sand (SC-SM)*

| PL | PI | GI | TYPE OF SPECIMEN | TYPE OF TEST |
|----|----|----|------------------|--------------|
| 23 | 17 | 6 | Remolded | R |

REMARKS *Fore Pressure @ 5 min 1/2 axial strain. Major, Minor Principal stress.

Sample: mild to approx. medium cut out of 14.2% (comp. 12%) and dry density of 11.2 lb (95% max. density)

PROJECT *TAILRICE CHNL, Cooper River*

REVISIONS *51.50.000, 5.01.1000*

BORING NO *T-24* SAMPLE NO *B-1*

DEPTH *0.0'-9.0'*

LABORATORY *NED* DATE *December, 1975*

TRIAXIAL COMPRESSION TEST REPORT

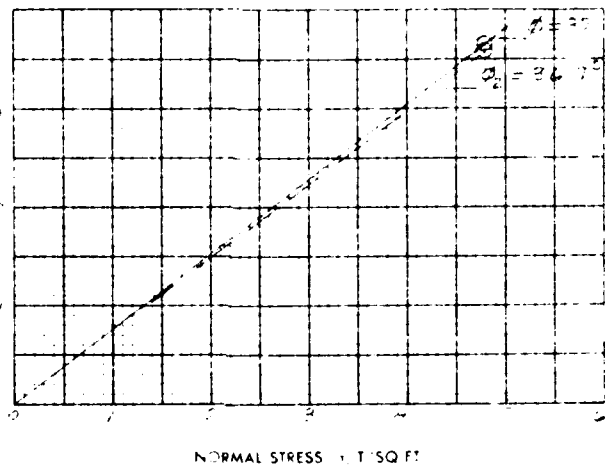
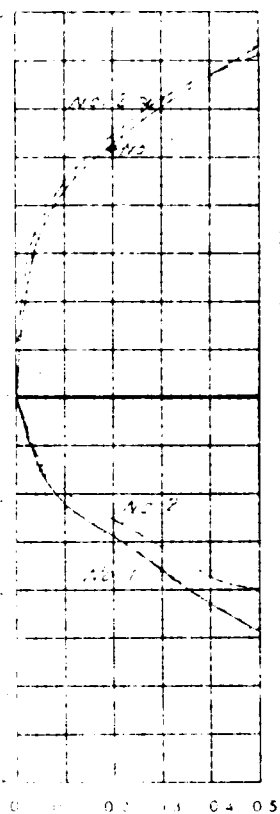
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REV JUNE 1970

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TRANSLUCENT

(EM 1110-2-1906)

T-25.3
T-248



| | | | |
|--|-----------------------|------------------|-------|
| TEST NO. | | 1 | 2 |
| INITIAL | WATER CONTENT | W | 21.5 |
| | VOID RATIO | e | 0.710 |
| | SATURATION | S | 100 |
| | DRY DENSITY, LB/CU FT | ρ_d | 1.25 |
| VOID RATIO AFTER CONSOLIDATION | | e | 0.710 |
| TIME FOR 50 PERCENT CONSOLIDATION, MIN | | t | 10 |
| FINAL | WATER CONTENT | W | 21.5 |
| | VOID RATIO | e | 0.710 |
| | SATURATION | S | 100 |
| | DRY DENSITY, LB/CU FT | ρ_d | 1.25 |
| NORMAL STRESS, T/SQ FT | | σ | 4.0 |
| MAXIMUM SHEAR STRESS, T/SQ FT | | τ | 8.5 |
| ACTUAL TIME TO FAILURE, MIN | | t | 60 |
| RATE OF STRAIN, IN/IN | | $\dot{\epsilon}$ | 0.005 |
| ULTIMATE SHEAR STRESS, T/SQ FT | | τ_u | 8.5 |

TYPE OF SPECIMEN: *Standard* SIZE: *3 in square* THICK: *0.5 in*

CLASSIFICATION: *fine silty fine sand (SC-1)*

TEST NO.: *1* FL: *17* DT: *6* LG: *2.67*

REMARKS: *Sample tested at approx. moisture content of 19.2% (1.25 dry density of 11.25) (1.25 min. density)*

PROJECT: *Cooper River Diversion, St. Stephen, S. Carolina*

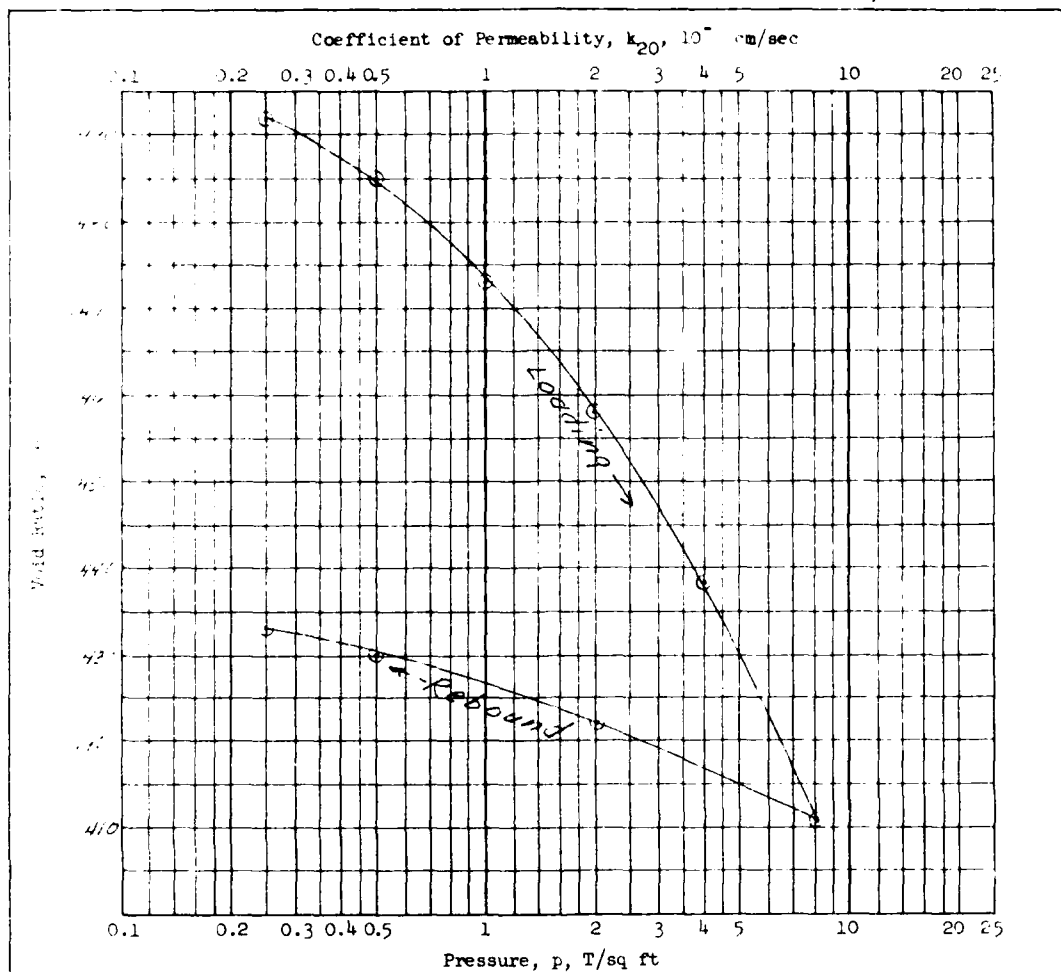
AREA: *TAILRACE CANAL*

BORING NO: *T-27B* SAMPLE NO: *B-1*

DEPTH: *0.0' - 9.0'* DATE: *December 1975*

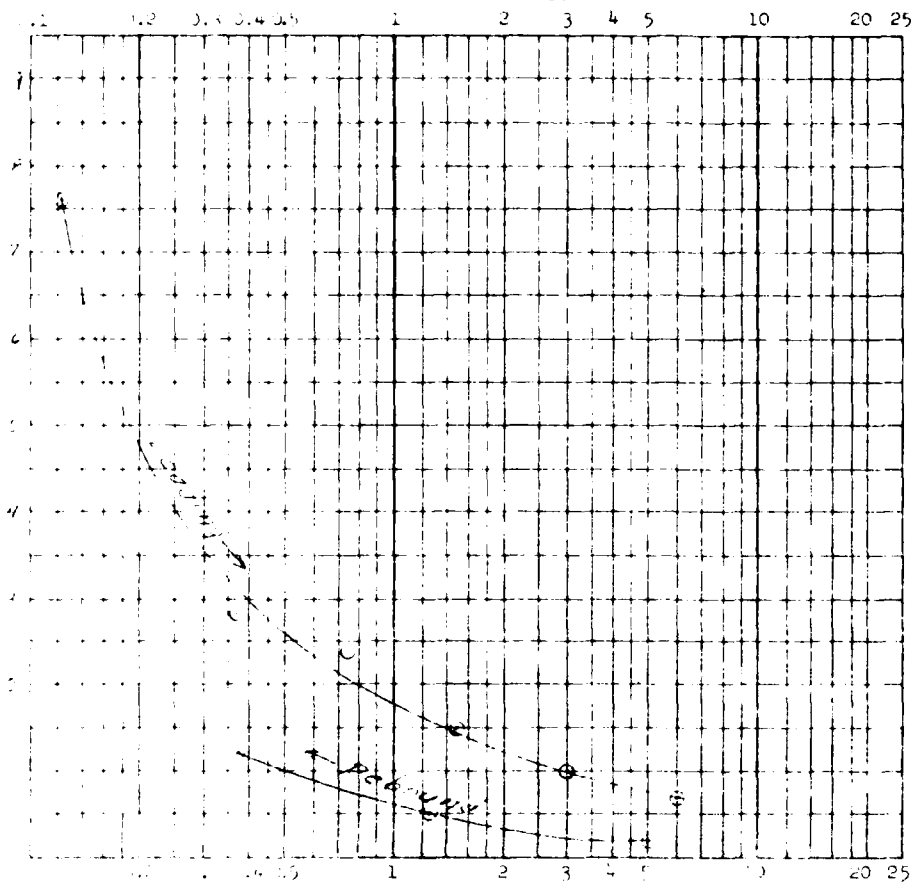
DIRECT SHEAR TEST REPORT

T-254



| Type of Specimen | | Before Test | | After Test | |
|----------------------------------|--------------------------------|---|--------------------------|----------------------------------|-----------|
| Diam | 4.45 in. | Ht | 1.0 in. | Water Content, w_o | 14.0 % |
| Overburden Pressure, p_o | T/sq ft | Void Ratio, e_o | 0.511 | w_f | 14.6 % |
| Preconsol. Pressure, p_c | T/sq ft | Saturation, S_o | 73.7 % | e_f | 0.433 |
| Compression Index, C_c | 0.08 | Dry Density, γ_d | 111.0 lb/ft ³ | S_f | 80.3 % |
| Classification | clayey-silty fine SAND (SC-SM) | k_{20} at $e_o =$ $\times 10^{-7}$ cm/sec | | | |
| LL | 23 | G_s | 2.67 | Project Cooper River Rediversion | |
| PL | 17 | D_{10} | | St. Stephen, S. Carolina | |
| Remarks | | Area THILRACE CHANNEL | | | |
| moisture content of 14.2% | | Boring No. | T-27 | Sample No. | B-1 |
| (0.116, 12%) and dry density | | Depth | 0.0' - 9.0' | Date | Dec. 1975 |
| of 111.2 Pci. (95% max. density) | | CONSOLIDATION TEST REPORT | | | |

Coefficient of Permeability, k_{20} , 10^{-7} cm/sec



Pressure, p , T/sq ft

| | | | | | |
|---|---------------------------------|---|---------------|------------|--|
| Sample No. <i>A-1001-1</i> | | Before Test | | After Test | |
| Water Content, w_o | <i>14.0</i> % | w_f | <i>14.6</i> % | | |
| Void Ratio, e_o | <i>0.511</i> | e_f | <i>0.433</i> | | |
| Saturation, S_o | <i>73.1</i> % | S_f | <i>80.3</i> % | | |
| Dry Density, γ_d | <i>111.0</i> lb/ft ³ | | | | |
| Classification: <i>CLAY - SILTY CLAY</i> | | k_{20} at $e_o =$ <i> </i> $\times 10^{-7}$ cm/sec | | | |
| Project: <i>Cooper River Redirection</i> | | | | | |
| Location: <i>St Stephen, S. Carolina</i> | | | | | |
| Area: <i>THURGOOD CANAL</i> | | | | | |
| Boring No. <i>T-27</i> | | Sample No. <i>B-1</i> | | | |
| Depth: <i>0.0' - 9.0'</i> | | Date: <i>Dec. 1972</i> | | | |
| Remarks: <i>Consolidation test performed on sample A-1001-1</i> | | | | | |
| Date of Report: <i>12/1/72</i> | | | | | |

CONSOLIDATION TEST REPORT

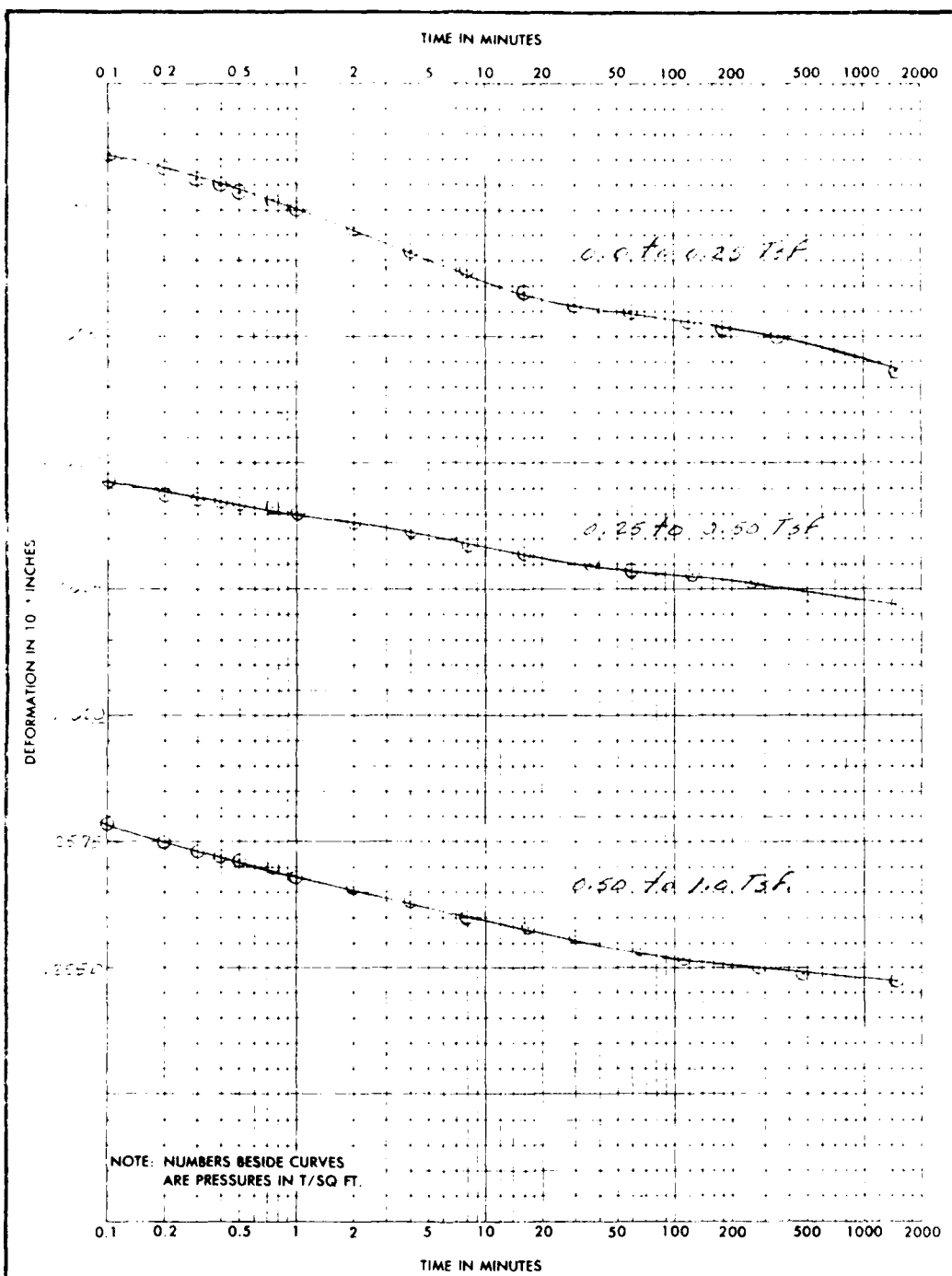
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Sheet 2 of 5

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T-251



PROJECT *Cooper River Rediversion, St. Stephen, S. Carolina*

AREA *TAILRACE CANAL*

BORING NO. *T-27*

SAMPLE NO. *B-1*

DEPTH *0.0' - 9.0'*

DATE *D.C. 1975*

ENG FORM 2088
1 MAY 67

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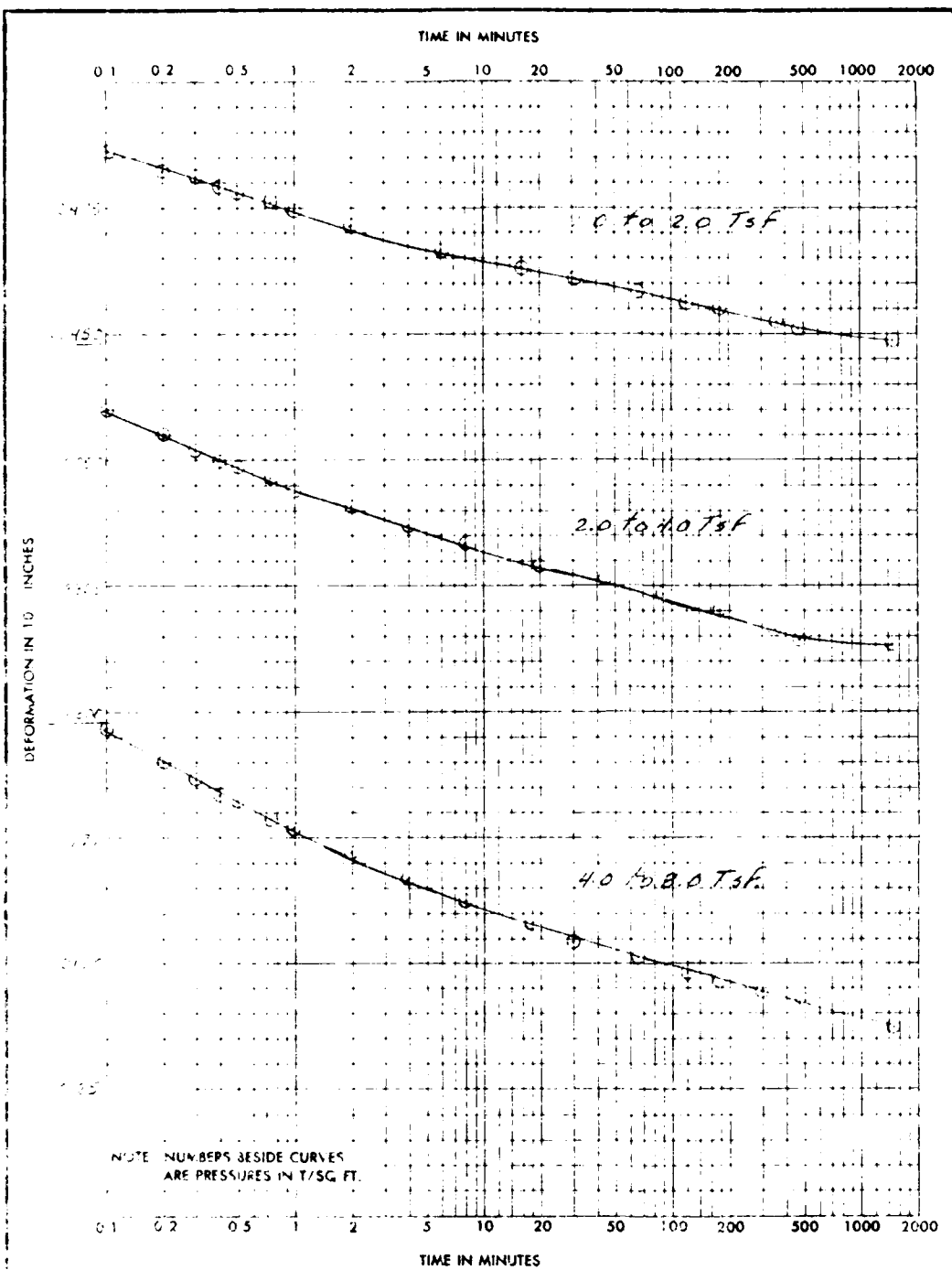
CONSOLIDATION TEST—TIME CURVES

(TRANSLUCENT)

sheet 3 of 5

* GPO: 1984 OF-715 965

F257
T-252



PROJECT *Cooper River Rediversion, St. Stephen, S. Carolina*

AREA *TAILRACE CANAL*

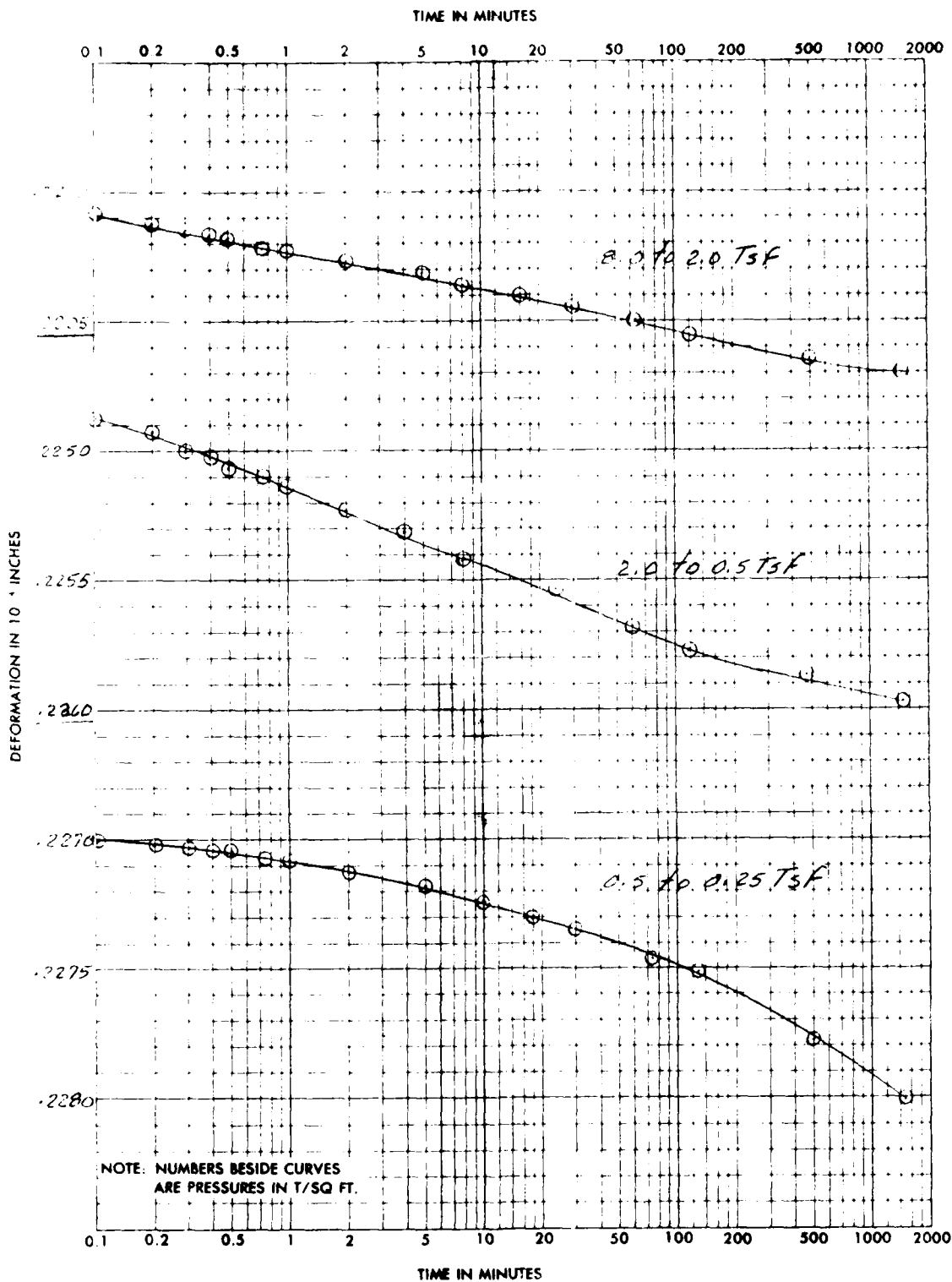
BORING NO. *T-27* SAMPLE NO. *B-1* DEPTH *0.0' - 9.0'* DATE *Dec. 1975*

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CONSOLIDATION TEST—TIME CURVES (TRANSLUCENT)

sheet 4 of 5

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| | | | |
|--|-----------------------|------------------------------------|-----------------------|
| PROJECT <u>Cooper River Rediversion, St Stephen, S. Carolina</u> | | | |
| AREA <u>TAILRACE CANAL</u> | | | |
| BORING NO. <u>T-25</u> | SAMPLE NO. <u>B-1</u> | DEPTH <u>0.0'-9.0'</u> | DATE <u>Dec. 1975</u> |
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1 MAY 63 | | PREVIOUS EDITIONS
ARE OBSOLETE. | |
| CONSOLIDATION TEST—TIME CURVES | | | (TRANSLUCENT) |

sheet 5 of 5

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T-25

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